EXPLORING THE IMPACT OF SERVICE LEARNING ON INTERPROFESSIONAL COLLABORATIVE PRACTICES OF OCCUPATIONAL THERAPISTS

By

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Abstract

Previous research has demonstrated that students in healthcare related disciplines, who experience service learning, gain professional skills necessary for their career (Flinn, Kloos, Teaford, Clark, & Szucs, 2009; Holsapple, 2012; Seif et al., 2014). Research connecting service learning and career outcomes has primarily focused on short term perception of service learning benefit. Service learning may have a long lasting impact on career outcomes, especially for Occupational Therapists practicing in interdisciplinary healthcare teams. While previous research has suggested that service learning increases professional skills, little research has addressed the long lasting impact of service learning on interprofessional collaborative practice in healthcare teams. We aim to examine the impact of service learning on interprofessional collaborative practice (using the AITCS) (Orchard, King, Khalili, & Bezzina, 2012) in a sample of 379 licensed Occupational Therapists from the general population. Results indicate that service learning does have an impact on interprofessional collaborative practice, specifically related to core principles of team-based healthcare. Findings from this study suggest service learning could be an effective tool for interprofessional education, especially in the healthcare field.

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Executive Summary

My dissertation project is aimed at understanding the impact of service learning on perceived interprofessional collaborative practice for Occupational Therapists. We used the following definition for service learning: a method of teaching that combines clinical and academic skills and community service into one experience (Housman, Meaney, Wilcox, & Cavazos, 2012). This unique experience allows students, especially in healthcare, to gain understanding of other disciplines while developing the interprofessional collaborative skills necessary to their career development. These practices include partnership/shared decision making with other professionals, cooperation among team members across settings and coordination of client care among healthcare teams (Orchard et al., 2012). I investigated the impact of service learning on interprofessional collaborative practice of Occupational Therapists.

The first manuscript, "Engaging First Year College Students in the 21st Century: An examination of active learning and the student experience", provides the framework for how active learning is perceived, implemented and studied throughout higher education environments. I first explore the educational priorities and values as seen in previous research and policy. For example, in 2008 the Association of American Colleges and Universities published the High-Impact Education Practices with the hopes of creating a new culture of higher learning. In this study I explore the impact of these educational practices on first year student engagement, using retrospective pre/post trend analyses across two time periods with existing public data from the National Survey of Student Engagement (NSSE). I found a slow upward trend, suggesting an increase in student engagement after the High-Impact Educational Practices became available to faculty. I use these findings to discuss implications for teaching practices and offer directions for future research. This manuscript was reviewed by the *Active*

Learning in Higher Education Journal, but was rejected with proposed changes for possible resubmission.

The second manuscript, "Student Engagement in Introductory College Courses," examines the relationship between engagement among students and faculty's choice in coursework for introductory college classes. I evaluated the relationships between various syllabi components and student feedback data to investigate student engagement among students enrolled in introductory college coursework using retrospective analysis. I found that introductory courses are being taught in significantly different ways, which impacts the ability to adequately assess the course and student satisfaction. I discuss the opportunity for educators to streamline course structure, especially for introductory coursework, so we are effectively preparing undergraduate students for the increased expectations of higher learning.

The third manuscript, "Benefits of Service-Learning across Disciplines" describes the benefit of service learning across multiple college disciplines. Service learning is an educational tool grounded in active learning philosophy and allows students to experience learning through a combination of classroom material and community engagement. I used a cross-sectional survey design comprised of two measures: Thriving Quotient (Schreiner, 2010) and the Service Learning Benefit scale (Toncar, Reid, Burns, Anderson, & Nguyen, 2006). I found that levels of benefit did not depend on discipline, and that students from each discipline reported high scores of benefit from their service learning experience. This study supports the continued implementation of service learning in higher education. This study is approved for publication with the *Journal for Civic Commitment* (in press March 2016).

Finally, the culminating manuscript is titled "Exploring the Impact of Service Learning on Interprofessional Collaborative Practices of Occupational Therapists." Those who experience service learning describe the experience as highly beneficial to their professional growth and I am interested in understanding the long term impact of those benefits. I found that OTs who participated in service learning reported higher levels of interprofessional collaborative practices in their current work setting. Also, the practices found to be significant for those who experienced service learning, are also defined as core principles of team-based healthcare.

Through my dissertation process, I have developed a broad understanding of the importance of engagement in higher education, especially in growth of healthcare professionals. Further, I have gained insight into how certain activities, such as service learning can impact long term growth after graduation. This long term impact amplifies the need to connect the skills necessary for healthcare related practice and the skills taught in higher education. As I continue my research career, this insight will provide a foundation to further examine strategies related to engagement with students, healthcare teams and the community.

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Section II

Comprehensive Examination I

Engaging First Year College Students in the 21st Century: An examination of active learning and the student experience

Lindsey Jarrett

Abstract

The importance of higher education across the globe is currently expanding into a priority, as countries determine the value of university learning on social and economic growth (Morgan and Morgan, 2014). For example, the United States continues to prioritize higher education; as it is the largest discretionary item among state budgets (Christensen and Eyring, 2011), and also a significant cost for families. As a return on this investment, stakeholders in higher education (from students to governmental agencies) expect higher education to produce competent members for the workforce. Further, students who attend university require a satisfying educational experience that facilitates the competence necessary for their future career. This satisfaction is often measured by engagement in college experiences. For example, the Association of American Colleges and Universities published the High-Impact Educational Practices (AAC&U, 2008) for faculty in 2008 to outline evidence based practices to increase student engagement. The present research explores the impact of these educational practices on first year student engagement. We employed a retrospective pre/post trend analysis across two time periods using existing data from the National Survey of Student Engagement (NSSE) (NSSE, 2013) to determine whether report of engagement practices increased after the High-Impact Educational Practices (2008) became available. There was a slow upward trend, suggesting student engagement increased after the High-Impact practices became available to faculty. This research builds on previous studies by investigating how students are engaged in higher education experiences within the classroom. We discuss implications for teaching practices and offer directions for future research.

Introduction

Higher education has become an immense enterprise comprised of thousands of institutions, millions of students and faculty members and often the largest discretionary item in budgets across the globe (Bok, 2013; Christensen and Eyring, 2011). Post-secondary education is also a substantial investment for students and their families in several developed countries. For example, according to the U.S. Department of Education (2012), for the 2010-11 school year, students spent an estimated $13,600 at public institutions, $36,300 at private not-for-profit institutions, and $23,500 at private for-profit institutions for undergraduate tuition, room and board. As tuition costs continue to rise, stakeholders in higher education are likely paying more attention to the role of colleges and universities in the global workforce.

Throughout history, policymakers, administrators and instructors in higher education have been examining the purpose of higher education within the walls of their institutions, their communities, and in society as a whole. In 1865, scholars were convinced that great universities should excel in all academic disciplines, discover new knowledge, contribute to social and economic welfare, and provide curricular freedom of choice (Christensen and Eyring, 2011). In the modern world, colleges and universities have assumed an importance far beyond their role in earlier times. They are now the country's chief supplier of three ingredients essential to national progress (1) new discoveries in science and technology (2) expert knowledge essential to the work of most important institutions (3) and well-trained adults with the skills required to practice professions, manage a variety of organizations and perform a growing proportion of more demanding jobs in an advanced, technologically sophisticated economy (Bok, 2013). Further, the abundance of jobs that will be created in the next decade will require skills and competencies

beyond those acquired in secondary education (Pike and Kuh, 2005). Higher education has the ability to move young adults forward through their careers, but as costs continue to rise, those young adults expect a satisfying college experience. Thus, as higher education continues to be of great importance in the global job market, stakeholders are attempting to develop strategies to measure college satisfaction.

The trend of discussing student satisfaction in higher education has drawn attention to the concept of student engagement (Delialioğlu, 2012). To empower university graduates for a career after college, instructors are responsible for providing intentional, reflective and connected educational experiences (Youatt and Wilcox, 2008). According to Laird et al. (2008a) numerous research studies on college impact and persistence suggest that student engagement is an area of emphasis worth examining in higher education. Engagement is a term that crosses disciplines within and outside of the field of education, requiring a consistent definition that is measurable, especially in the area of education.

The concept of engagement as an effective educational practice broke ground in 1932, popularized in the 1970's and 1980's through the 1990's and further assessed through the National Survey of Student Engagement (NSSE) in the 2000's (Pike et al., 2011a). According to Laird et al. (2008a) student engagement consists of two components: first, the amount of effort that students put into their activities, studies and experiences that contribute to student success outcomes; second, how the institution allocates resource and organizes learning opportunities to encourage students to participate in such activities. Scholars across time, despite the use of various terminology, have agreed on the premise that student engagement refers to the time and energy students devote to educationally sound activities inside and outside of the classroom, and the policies and practices that institutions use to induce students to take part in these activities

(Kuh, 2003). Today engagement is a term used to represent constructs such as quality of effort and involvement in learning activities (Kuh, 2009). These constructs are used by institutions in higher education to develop effective educational practices with faculty in the classroom, the university environment, research, and in establishing meaningful relationships across faculty, administration and students alike.

Current research surrounding student engagement has created debate among higher education scholars and practitioners (Gordon et al., 2008). While engagement is becoming a widely used term across university campuses, researchers are still seeking strategies to measure such engagement across various institutions. Laird et al. (2009) argue that since the quality of an institution's educational program should be positively related to the amount of time that students are engaged in certain practices, assessing student engagement is a meaningful way to determine how well an institution is performing. Thus, those interested in higher education are developing measurement tools to evaluate the connection between engagement, grades, persistence and study habits of university students. For example, in a study by Kuh et al. (2008), the researchers found that student engagement in educationally purposeful activities during the first year of college had a positive, statistically significant effect on persistence, even after controlling for background, other college experiences, academic achievement and financial aid. Further, since higher education is seen to be a path to sustainable careers, researchers are showing interest in the connection between engagement during college and habits formed for career development.

Scholars suggest that by being engaged, students form habits that put them at an advantage for a lifetime of continuous learning (Laird et al., 2008a). Student engagement is a strong predictor of learning and personal development (Carini et al., 2006). This engagement adds to the foundation of skills that are essential to living a productive and satisfying life after

college (Carini et al., 2006). Further, earning a bachelor's degree is linked to long-term cognitive, social and economic benefits to those individuals, enhancing the quality of life of them, those around them and society as a whole (Kuh et al., 2008). With researchers continuing to examine the importance of engagement across higher education, individual institutions are finding ways to measure how their student populations are engaged in their education.

Due to the positive links found between student engagement and such measures of student persistence and satisfaction, many institutions in higher education today are searching for strategies to develop high levels of student engagement (Pike et al., 2011b). Institutions have the ability to measure student engagement through faculty observations, changes in grades, student participation in various activities and through surveying their student population. Fortunately, various measurement tools exist in higher education that assess campus environment, grades, persistence, classroom performance and study habits across various student populations. For the purpose of this paper, engagement was analyzed through examining instruments that measure and inform practice classroom engagement.

Since the 1970's some instruments have been available to assess aspects of student engagement (Kuh, 2009). The National Survey of Student Engagement (NSSE) launched in 2000 provided the ability for institutions across the United States and Canada to measure their students' college experiences. Tools like the ones utilized by the NSSE can help reframe questions about educational effectiveness and accountability in ways that go beyond resources and reputations. NSSE became available just as the accountability storm was brewing and well positioned to provide what institutions needed to measure the undergraduate experience (Kuh, 2009). Across time, the NSSE and similar measurement tools grew in popularity, providing data to institutions and the public, forcing a conversation to emerge in classroom strategies.

The Association of American Colleges and Universities (AAC&U) published High Impact Educational Practices in 2008. These practices typically demand that students commit to considerable amounts of time and effort to purposeful tasks, interact with peers and faculty and receive timely feedback in their educational environment (Kuh, 2008b). These practices provide institutions with strategies that can be utilized across various classrooms, faculty and campus environments.

This paper will initially review the NSSE functions, survey construction and data collection methods as background to analyzing this data from across six specific years (2006, 2007, 2008, 2010, 2011, and 2012). The years 2006-2008 represent a time period before high impact learning practices became readily available in the literature; the years 2010-2012 represent a time period after which evidence about high impact learning practices became available. We will evaluate the influence of the high impact learning practices on the students' first year college engagement.

Method

In this study we examine the patterns of first year student engagement across 2 periods to evaluate changes reflective of increased use of high impact educational practices in classrooms. We hypothesize that if high impact educational practices affect student engagement, then NSSE data will be higher after high impact learning evidence became available. Specifically, we will examine 'Level of Academic Challenge' and 'Active and Collaborative Learning' questions from the NSSE instrument to see whether first year students had a different experience before and after the High Impact Learning evidence became available to college faculty.

Design

We conducted a pre/post visual trend analysis across 2 time periods to determine whether changes occured in student engagement when the high impact educational practices became available to college faculty. The researchers performed a retrospective analysis of existing data to examine mean and standard deviation scores of student engagement across two benchmarks (Level of Academic Challenge and Active and Collaborative Learning, see Table 1). Mulitiple comparison tests are most often used in studies where the independent variable is nominal and can be used to show difference between time intervals. The levels of an independent vairable are ordered along a continuum and we are interested in examining the shape of the response, rather than just the differences between levels. We conducted a trend analysis to find the most reasonable description of continuus data based on the number of turns (ups and downs) seen across the levels of the independent variable. Trends are either classified as nonlinear or linear. For the purpose of this study, a linear trend line is examined. All data rise or fall at a constant rate as the value of the independent variable increases (Portney and Watkins, 2008a). This paper examines public USA NSSE reports before (i.e., years 2006, 2007, 2008) and after (i.e., years 2010, 2011 and 2012) high impact learning evidence became readily available to college faculty. These years provide a representative sample of the three years prior and three years post implementation of the High Impact Educational Practices.

Instruments

The NSSE uses a standardized survey instrument (The College Student Report) which assesses student engagement on college campuses. The entire survey contains 42 questions categorized in five benchmarks: Level of Academic Challenge, Active and Collaborative

Learning, Student-Faculty Interaction, Supportive Campus Environment and Enriching Educational Experiences, along with questions pertaining to demographic information. Table 1 provides a summary of each benchmark, including activities covered within questions and the number of questions per benchmark. The first two benchmarks listed in Table 1: Level of Academic Challenge and Active and Collaborative Learning. These two benchmarks are used for analysis in this study because they closely relate to classroom experiences.

The NSSE instrument is given electronically in the spring of each year to students who are categorized as first year students and seniors across the United States and Canada. Students are randomly selected through their university to participate in the electronic or paper version of the survey. In general, the psychometric properties of the NSSE are very good, and items have been changed slightly based on data collected from focus groups, cognitive testing and various psychometric analyses (Kuh, 2009). The NSSE shows good reliability, specifically internal consistency with Cronbach's alpha at 0.70 or greater (2012) . The survey takes approximately 15 minutes to complete. For the purpose of this study, we examine first year students from the NSSE data set to represent student engagement across the initial year of college. Across the six years examined for this study, first year student respondents ranged from 122,000 to 186,000. Students given the NSSE each year are diverse in age, gender, racial and ethnic backgrounds. For the purpose of this study, participants are not differentiated by demographics, but considered as one group (first year students). We argue that first year college students share common experiences within the classroom that span across gender, class, race and ethnic differences.

The High-Impact Educational Practices initially listed in the Association of American Colleges and Universities 2007 Annual Report and published in the following year (Kuh, 2008a), represent activities intended to enhance student engagement. These practices are used in this

study as an instrument available to college faculty after the year 2008. The various High-Impact Educational Practices provide colleges and universities with a foundation intended to cultivate strong academic, social and personal growth for students. We included First-Year Seminars and Experiences, Common Intellectual Experiences, Learning Communities and Collaborative Assignments and Projects for this analysis.

First-Year Seminars and Experiences include bringing students and faculty together for critical inquiry, writing, collaborative learning and in developing other practical life skills. Common Intellectual Experiences consist of common courses or program that includes participation in a learning community and/or advanced studies. Learning communities encourage learning integration across courses to involve students with meaningful content outside of the classroom. Many of these communities explore a common topic across different disciplines. Collaborative Assignments and Projects combine learning problem solving strategies in a team-based approach and listening to insights of other students with various backgrounds. This practice includes such approaches as study groups, team-based assignments and cooperative projects.

Data Analysis

We conducted a trend analysis to compare the NSSE data (mean and standard deviation scores) before and after availability of the High Impact Educational Practice (Figures 1 and 2). We will examine the shape of the response to find the "ups and downs" seen across the levels of the independent variable. The trend analysis will tell us the direction of change across years.

Results

The trend analyses presented in Figures 1 and 2 represent years before and after the availability of High-Impact Educational Practices. Mean and standard deviation scores for the Level of Academic Challenge are shown in Figure 1 and the mean and standard deviation scores for Active and Collaborative Learning are shown in Figure 2. The mean and standard deviation scores are shown across the respective years along the x-axis. A linear trend line is drawn to represent a visual trend across mean scores. The trend line shows a slow upward trend across the six years.

Discussion and Implications for Further Research

We hypothesized that the selected NSSE benchmark scores would noticeably increase after the High Impact Learning Practices became readily available. Based on the results of the trend analyses for both benchmarks, however, there was little change. Year one students reported about the same amount of Active and Collaborative Learning and Academic Challenge across both time periods. Care should be taken not to over generalize the results of this research. The findings of this study are limited to institutions that participated in NSSE 2006, 2007, 2008, 2010, 2011 and 2012. Additionally, the data was retrieved using public reports of analyzed data. The relatively short survey does not measure all aspects of student engagement or student learning.

It is important to note that the NSSE scores are based on a scale of 1 to 100; the average first year student reported a score of slightly over half for Level of Academic Challenge (51-54) and a score of less than half for Active and Collaborative Learning (41-44). These findings suggest a possible disconnect regarding academic expectations between students and instructors.

Recent studies of the NSSE have reported similar correlations on the two Benchmarks mentioned. For example, student comments on the 2006 NSSE suggest they are critical of unenthusiastic teaching approaches and a perceived lack of teaching skills (Chambers, 2010). The abilities of the instructor to provide a rigorous academic environment may lead to greater outcomes for the student, especially in their first year at a university. In a recent study of NSSE data, Fuller et al. (2011) found that "higher Level of Academic Challenge benchmark scores during students' freshman year predicted higher cumulative GPA (p. 742)." Yet, Roksa and Arum (2011) found that forty-five percent of undergraduates in their first two years of college show no statistically significant gains in learning (p. 35). These findings provide a framework into inquiry of why first year university students are not engaged in rigorous learning, which may provide insight into the university experience at a classroom and institutional level.

Transforming classroom content to provide increased academic rigor may only impact one level of the university culture. Across the globe, the university experience is not always defined by academics, but also by the social experience. A campus climate that may use its resources to advance their social climate, may consequently weaken academic rigor. For example, in higher education, students may succumb to the desire to attend an institution with an active social life or a big-time athletic program while underestimating the long-term benefits a good undergraduate education can provide (Bok, 2013). College is potentially a transforming experience for students to examine their previous ways of knowing, thinking and behaving (Kuh, 2003), which provides an opportunity to create communities of learning to ultimately form a success-oriented campus culture (Kuh et al., 2008). For students, the university experience may naturally expand social freedoms throughout the campus environment and intellectual capacity within the classroom. The expansion of social and intellectual abilities is unique to the university

experience and is often novel to young adults who transition from secondary education. For example, Gibson (2011) argues that students have been socialized to expect traditional assignments, such as exams, papers and presentations. Thus, when students come to college with little experience with university-level curriculum, faculty must be prepared to guide students to effective learning strategies, utilize innovative, engaging teaching strategy and be available to their students (Gasiewski et al., 2012). This preparation not only empowers students to engage in learning, but also creates a university atmosphere centered in successful educational outcomes for their diverse populations.

Students attending college represent a wide range of learning abilities, socioeconomic backgrounds and educational habits stemming from their previous, as well as their perceived future educational experiences. Given the diverse backgrounds of students in higher education, students often arrive not knowing whom or how to ask for help, and faculty shape the classroom climate that affect their level of success (Gasiewski et al., 2012). Specifically, current research studying first year student engagement suggests that classroom environments and activities are linked positively with better persistence rates and teaching strategies should be of particular interest to institutions (Laird et al., 2008a). Especially in introductory classes, Gasiewski et al. (2012) point out the emergence of the 'engaging' professor who utilizes active and collaborative learning, and the departure of the 'gatekeeper' professor who directs class in lecture format. The classroom climate plays a vital role in student success, social growth and academic confidence. Researchers explain that faculty and staff members must organize curriculum to promote and encourage students to participate in, the kinds of activities that foster high levels of engagement and essential learning outcomes needed to meet the demands of the twenty-first century (as cited in Pike et al., 2011a: 316).

The duty of engaging students is also required by the institution, as it encourages teaching that is founded in research, policy and appropriate practices. Given the results of this study, engagement will not occur merely with the availability of the High Impact Education Practices, but may require facilitation by their institution. For example, Lane Community College utilizes High Impact Practices by the development of Core Learning Outcomes, first-year experiences, mandatory orientation and learning communities university-wide for students to be empowered throughout their learning process (Brau et al., 2013). Examples such as Lane Community College provide a benchmark for other higher education institutions, allowing a more in depth conversation surrounding innovative strategies of teaching across all grade levels.

Introductory coursework, specifically, has traditionally used lecture-based methods of instruction that give students a passive role in their learning. Problem-based learning method, however, encourage students to actively engage in information seeking (Delialioğlu, 2012). Institutions across the globe are incorporating active learning strategies, such as incorporating student response systems, group projects, presentations, peer-led team learning and case studies into the classroom environment (Gasiewski et al., 2012). Active learning provides opportunities for students to actively search for information to make sense of the content of the course. For example, active methods of pedagogy (i.e. having students work collaboratively at solving problems) and providing opportunities for undergraduates to do research with faculty are methods of getting students more engaged in active learning (Bok, 2013). Zhao and Kuh found such activities as first-year seminars, service-learning courses, and learning communities which engage students positively impact first year grades and persistence to the second year (as cited in Kuh et al. 2008, p.555). Further, Eric Mazur's research showed that with assistance from a student's peer even less competent students can make significant gains, equal to a well-qualified

one in a traditional lecture environment (Christensen and Eyring, 2011). The implementation of these strategies within classrooms, especially at lower grade levels may enable students to effectively proceed through the university system.

Particularly, the NSSE measures active learning through the active and collaborative learning benchmark, while High Impact Education Practices recommend classroom strategies for active learning through group projects, learning communities and common intellectual experiences. Although some may argue that faculty teaching introductory courses are reluctant to embrace active learning, the use of these strategies is growing (Gasiewski et al., 2012). Challenging traditional pedagogies of teaching throughout higher education classrooms allows discussion of alternative ways to teach students. Active methods of teaching are beneficial to instructors, as well as students, providing an avenue for meaningful interactions between teacher and learner. It is understandable that the various stakeholders in higher education seek accurate information about the educational experience as well as measurable indicators of student success and educational outcomes (Gordon et al., 2008). If instructors used engaging pedagogies to design assignments and activities, students would read more books, write more papers, meet more with faculty and peers, and use information technology appropriately, all leading to gains in critical thinking, problem solving, communication and responsible citizenship (Laird et al., 2008a).

To understand student perception of the learning environment, establish effective teaching strategies and to ultimately create a university culture founded in higher learning, further research must be conducted. Unfortunately, the research currently available is often conducted solely in the researcher's classroom with their students, limiting the generalizability to other classroom environments (Gasiewski et al., 2012). Institutions should examine whether and

how their courses, particularly introductory level courses, present appropriate levels of academic challenge and engage students in active and collaborative learning within the classroom, in order to achieve higher levels of student engagement (Laird et al., 2008a). Research findings by Laird et al. (2008a) suggest that to improve persistence, institutions might try to modify early academic experiences in all classes to enhance student engagement, and not just rely on first-year seminars or learning communities to make up for deficiencies in learning conditions across other course offerings. Further research is needed to better understand how classroom instruction can be a vessel for high levels of academic challenge and active, collaborative learning.

Changing university education to focus on learning will require transforming students' overall educational experience, from what they gain while sitting in their classroom chair to faculty feedback (Roksa and Arum, 2011). Fortunately, promising research is making headway, such as the new NSSE instrument of 2013 (McCormick et al., 2013). NSSE 2.0 (given in the spring of 2013) measured student engagement through Engagement Indicators removing their traditional measurements of benchmarks, as seen since the 2000 NSSE (see Table 2). Engagement Indicators, across forty-seven items, are an expansion of the traditional benchmarks studied from the years 2000-2012. The survey items are now grouped within ten Engagement Indicators and further organized within four engagement themes (NSSE, 2013). In addition, the six former Enriching Educational Experiences items are now reported as High-Impact Practices. The data for NSSE 2.0 was made available to the public in November 2013, and additional research is needed to expand the conversation of engagement in higher education.

Based on the results of this study, we recommend further research on assessing engagement outcomes and using those results within the context of higher education. Assessment is worthwhile when campuses produce meaningful data, thoroughly consider and discuss

evidence-based improvement initiatives, and ultimately use results to improve educational effectiveness (Kinzie and Pennipede, 2009). The results of such measurement tools, such as NSSE alongside evidence based practice, such as High Impact Practices have the power to yield policy makers, administrators and instructors alike in transforming their institutions into spaces of high engagement. Kuh (2009) suggests with the right assessment tools institutions can identify areas where improvements in teaching and learning will increase the chances that their students will attain their educational and personal goals. It may not be a simple path, but it is worth the journey to have such discussions to better serve the global student population in the twenty-first century (Kean et al., 2008).

Table 1
Benchmarks of Effective Educational Practice

Benchmark	Description	Activities	Questions
Level of Academic Challenge (LAC)	Emphasizing the importance of academic effort and setting high expectations for student performance.	Studying and preparing for class, working harder than originally planned, assigned course readings, papers up to 20 pages, coursework emphasizes analysis, synthesis and organization of ideas, forming judgments and applying theories.	10
Active and Collaborative Learning (ACL)	Collaborating with others in learning prepares students to deal with unscripted problems during and after college.	Asked questions and/or contributed in class, class presentation, worked with other students on projects, tutored students, community based project provided in class, discussed ideas outside of class.	7
Student-Faculty Interaction (SFI)	Interaction with faculty inside and outside of the classroom to view problem solving techniques.	Discussed ideas, career plans, grades or assignments with an instructor, worked with faculty on activities and/or research other than coursework, received prompt feedback on coursework.	6
Supportive Campus Environment (SCE)	Colleges that are committed to their success and foster positive relations among different groups on campus.	Campus provides academic, non-academic and social support to help you succeed in those areas, quality of relationships with peers and institutional staff.	7
Enriching Educational Experiences (EEE)	Certain activities provide students with opportunities to synthesize, integrate, and apply their knowledge.	Talking with students with different religious beliefs, values, racial or ethnic backgrounds; campus encourages difference among students, technology use, participating in internships, service projects, foreign languages, studying abroad, independent study, social activities and learning communities.	12

Note. Adapted from National Survey of Student Engagement (2000). *The NSSE 2000 Report: National benchmarks of effective educational practice*. Bloomington, IN: Indiana University Center for Postsecondary Research.

Table 2
Benchmarks to Engagement Indicators

Benchmark (2000-2012)	Key Change	Theme	Engagement Indicator
Level of Academic Challenge	Expanded to focus on distinct dimensions of academic effort. Key items on reading, writing and study time will be reported.	Academic Challenge	High-Order Learning, Reflective & Integrative Learning, Learning Strategies, Quantitative Reasoning
Active and Collaborative Learning	Modified to emphasize student-to-student collaboration. Diversity items also added.	Learning with Peers	Collaborative Learning, Discussions with diverse others
Student-Faculty Interaction	Joined with a second measure about effective teaching practices.	Experiences with Faculty	Student-Faculty Interaction, Effective Teaching Practices
Supportive Campus Environment	Expanded to focus separately on interactions with key people at the institution and perceptions of the institution's learning environment.	Campus Environment	Quality of Interactions, Supportive Environment
Enriching Educational Experiences	Selected items are reported separately as High-Impact Practices.		Learning Community, Service-Learning, Research with a Faculty Member, Internship or Field Experience, Study Abroad, Culminating Senior Experience

Note. Adapted from NSSE. (2013) *NSSE: National Survey of Student Engagement*. Available at: http://nsse.iub.edu/html/about.cfm.

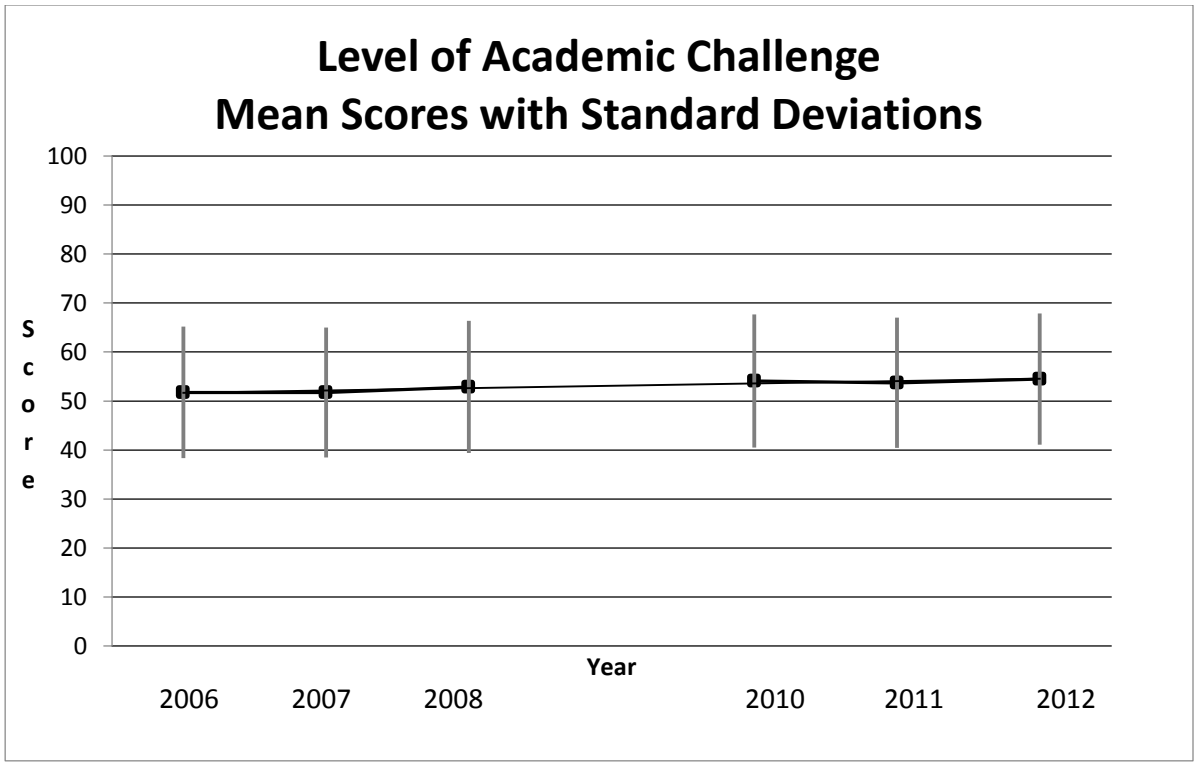

Figure 1 Level of Academic Challenge Mean and Standard Deviations

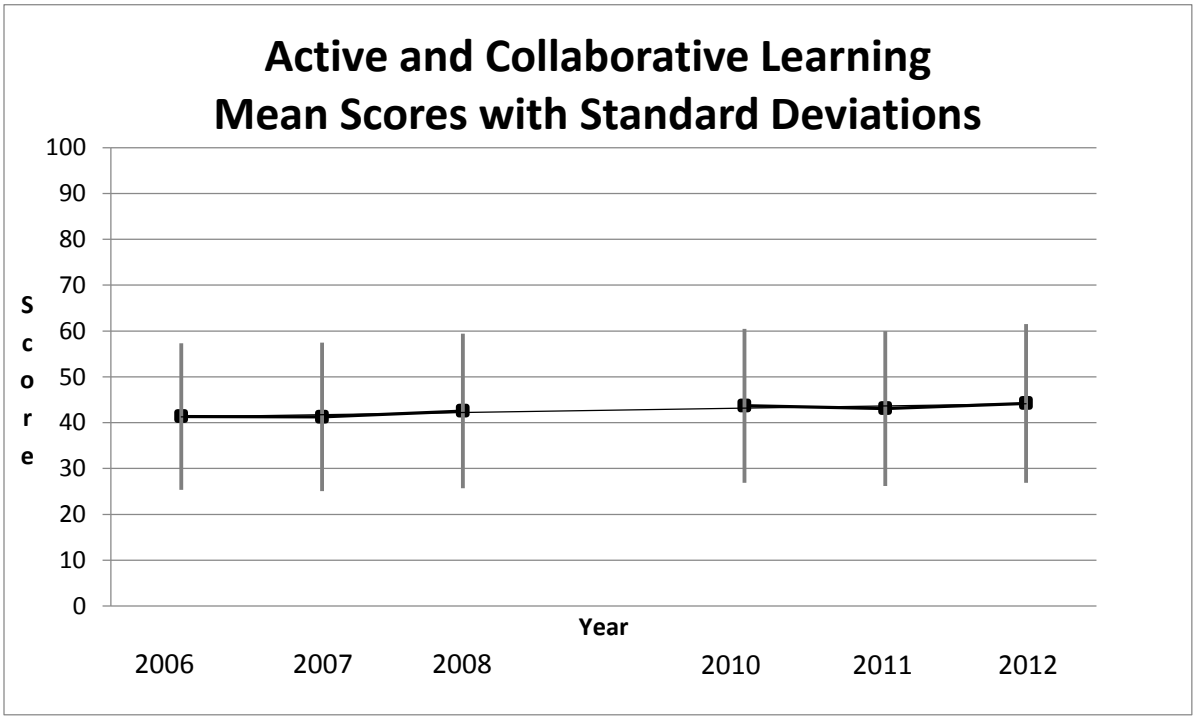

Figure 2 Active and Collaborative Learning Mean and Standard Deviations

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Section III

Comprehensive Examination II

Student Engagement in Introductory College Courses

Lindsey Jarrett

Introduction

Across the United States, as many as 1 in 3 college freshmen will not return for their sophomore year (LP, 2014). Despite hopes for a satisfying career after graduation, the idea of obtaining a college degree can be daunting given the intense responsibility and resultant debt. Additionally, the typical career path for a college graduate has changed over time; now there is an additional expectation that college has instilled values of leadership, innovation and creativity. These additional expectations have required innovative learning models to emerge that imbed both content and leadership, innovation and creativity. Scholars report that new teaching/ learning models must engage students in intentional, reflective and connected educational experiences (Youatt and Wilcox, 2008); since these learning models are not the norm in higher education, universities must examine their practices.

Researchers have been inspecting higher education practices across college campuses. For example, studies have examined grade point average (GPA), at-risk student factors (i.e. socioeconomic status, ACT/SAT scores, race/ethnicity) and institutional engagement (i.e. extracurricular activities) to measure student engagement in higher education (Cole and Korkmaz, 2010; Pike and Kuh, 2005; Bok, 2013; Laird, 2011; Strage, 2008; Gampert and Jones, 2013; Kuh et al., 2008). The results from these studies direct attention to campus-wide shifts in student centered programming, but leave little explanation about the impact at a classroom specific level. The classroom is where a student's ambition for learning can thrive or diminish. According to a national report of 600,000 college students across the United States, students at four-year public universities, (86%,516,000) indicate that intellectual growth is of great importance, as is excellent quality of instruction (88%, 528,000) (Noel-Levitz, 2014). Instructors must cultivate an atmosphere where students have the ability to listen to, learn from and

academically challenge each other (Kuh, 2007). Stakeholders in higher education are interested in how instructors engage and impact students within the classroom setting (Laird et al., 2008a; DeAngelo, 2014).

Higher education literature defines *engagement* as how a student is participating in the classroom environment. For example, according to Laird et al. (2008a) student engagement consists of the amount of effort that students put into their studies and how that effort contributes to student success outcomes. Traditional measurement of engagement throughout higher education literature involves satisfaction ratings at the end of semesters. For the purpose of this study we define engagement in a classroom as intentional, reflective and connected educational experiences (Youatt and Wilcox, 2008) that foster a student's lifelong learning with faculty, peers, their community and themselves. This definition provides a framework for assessing the impact of the classroom environment on instructors and students.

Inside of education, assessment is often used to determine levels of course effectiveness in a particular program. For example, course evaluations at the end of term ask about an instructor's ability to create a course that is conducive to higher learning. These evaluations provide the means to measure how students interpreted their learning from their instructor. Thus, the trend of discussing how students interpret coursework in higher education has drawn attention to the concept of student engagement (Delialioğlu, 2012). Student satisfaction is not only used for individual course development, but also in exploring recruitment and retention factors of university departments. For example, Dr. Laurie Schriener's (2009) study of satisfaction and retention found that student satisfaction is the greatest known predictive variable in student retention. Research in higher education provides stakeholders with the information

needed to improve graduation rates and boost student engagement on campus, but has yet to provide concrete solutions in retaining those students after their first year.

According to Laird et al. (2008a) numerous research studies on college impact and persistence suggest that student engagement is an area of emphasis worth examining in higher education. Specifically, few studies examine student engagement in introductory coursework. Introductory coursework has traditionally used lecture-based methods of instruction that give students a passive role in their learning. For example, Gasiewski et al. (2012) found that students who report a course as predominantly lecture-based report less engagement in the course. Active learning strategies inside of higher education classrooms are increasing in practice, but not at a rate that is sufficient to retain students after their first year in college. These active methods of teaching are beneficial to instructors as well as students, providing an avenue for meaningful interactions between teacher and learner. With an increasing awareness that many undergraduates are passive during teaching sessions, calls for instructional methods that allow students to become actively engaged have increased (Herrmann, 2013).

The purpose of this study is to understand the relationship between engagement among students and faculty's choice in coursework for introductory college classes. Researchers will evaluate the relationships between various syllabi components and student feedback data to investigate student engagement among students enrolled in introductory college coursework (Criminal Justice 101) using retrospective analysis. This study will provide the groundwork for a larger study aimed at assessing engagement through a comprehensive measurement tool specifically designed for introductory college coursework. The specific aims of this study include: 1) determine the extent to which syllabi structure contributes to student engagement outcomes and 2) examine the pattern of student engagement through the activities faculty

employ in their classroom. Researchers will use retrospective data across a total of seven different sections of a Criminal Justice 101 courses, spanning two semesters. We hypothesize that student ratings will be higher when the syllabi indicate more engagement activities.

Methodology

Institutional context and study participants

In the USA, students are required to complete approximately two years of college level general education coursework as a foundation for courses in the program of study. *Introduction to Criminal Justice* is a semester long course in a Criminal Justice program in a Midwest United States University. The course is required for Criminal Justice majors and also serves as a general education course for students from other disciplines. The course is managed by the Criminal Justice Department and taught by various instructors.

In the fall of 2012 and the spring of 2013, 246 students took *Introduction to Criminal* Justice in seven different sections. All sections were in session for an entire semester, but varied in enrollment, campus location and class times (day/evening and sessions per week). The demographics of the student subjects are listed in Table 1. Sections (S1-S4) represent those sections provided during the fall semester and sections (S5-S7) represent those provided in the spring semester.

Instruments

Syllabus. Each section examined in this study used a syllabus, a descriptive outline and summary of topics in the course of study. The syllabus is a tool often used in higher education to serve as a reference for both students and instructors and communicates the expectations of the

course. The university mandates standard components for the syllabi for each course as the foundation of content added by the instructor, including specific materials and teaching method.

Course Evaluations. The College of Arts and Sciences at the respective university utilizes a standardized anonymous course evaluation survey at the end of each semester to rate the effectiveness of each course. Students rate the instructor's teaching style, communication and interaction. Students also rate their own learning throughout the course by answering questions relating to their effort, grade point average, and completing a comment section. Appendix A provides the questions; we limited our analysis to the bolded questions reflecting student engagement. Out of the 246 students enrolled across sections, 80% (n=197) provided feedback at the end of the course.

Coding and reliability

To examine the course content of the syllabi we developed a coding rubric to separate syllabi activities into engagement and non-engagement activities (Figure 1) supported by current literature (NSSE, 2013; Kuh, 2008a). The researchers calculated a total engagement score (engagement activities/total activities) and used this percentage for data analyses.

To establish inter-rater reliability, two raters coded a syllabus from an introductory social science course taught at a similar university and obtained 80% reliability after two trials. With inter-rater reliability established, the researchers then coded all seven syllabi for this study. The researchers performed reliability checks and obtained at least 80% reliability across all syllabi after three trials. Researchers calculated an engagement score for each syllabus after coders obtained inter-rater reliability. In addition, researchers reexamined one syllabus because the

coders were in disagreement on the parts of a specific project. When the parts (written papers, presentation and peer to peer work) were coded individually, the coders obtained 80% reliability.

Statistical Analyses

Researchers completed descriptive analyses to obtain frequencies of gender, grade level and course sessions per class. In order to address research question 1, which was to determine the extent to which syllabi structure contributes to student engagement outcomes, we used multivariate analysis of variance (MANOVA). All quantitative data was analyzed using SPSS 20 (SPSS, 2011). MANOVA is used to account for the relationship among several dependent variables when comparing groups (Portney and Watkins, 2008a). This analysis was appropriate for the current data, in order to detect differences in student ratings (student evaluation scores per question) across the seven sections. Since MANOVA is an omnibus test statistic, it was only used to inform us whether a statistical difference existed among at least two sections. Researchers used post-hoc analyses (Tukey HSD) to determine which of the sections differ from each other.

To address research question 2, which was to examine the pattern of student engagement through the activities faculty employ in their classroom, we first developed a coding rubric and calculated an engagement score for each syllabus. With the engagement score and student evaluation scores, the researchers used correlation analyses. Correlational analyses allowed us to determine the extent to which the classroom activities (engagement score from syllabi) predicted student engagement (evaluation scores) across sections. The researchers chose to use Spearman's Rho (ρ) statistic, which is used when one or both of the variables are measured on an ordinal scale. Researchers created scatter plots to provide a visual representation of the analysis.

Results

Course Evaluation across Syllabi

In addressing research question 1, researchers conducted a one-way multivariate analysis of variance (MANOVA) to determine the effect of course sections on students' course evaluation scores. MANOVA revealed a statistically significant difference in students' course evaluation score based on course section, F (30, 882) = 4.067, $p < .001$; Hotelling's Trace = 0.692, partial η^2 = .12. Power to detect the effect was 1.0. Researchers used Hotelling's Trace to determine specific differences in feedback responses among sections. Given the significance of the overall test, researchers examined the univariate main effects using a series ANOVA tests. We found significant univariate main effects for questions across sections (Table 2).

Further, researchers conducted a series of post-hoc analyses (Tukey HSD) to examine individual mean difference comparisons across all seven sections and all five questions. Researchers found significant pairwise differences across sections. Particularly, students in Section 5 reported their instructor as having the least amount of organization (Question 3) and the lowest rating of their instructor's ability to answer student questions (Question 8) compared to all other sections. Sections 5 and 6 reported that their instructor had the least amount of ability to inspire them deeply about the subject (Question 5); the teacher to be the least effective (Question 9); and they invested the least effort (Question 14) when compared to all the other sections.

Engagement Scores and Student Feedback per Section

In regards to research question 2, researchers hypothesized that higher levels of engagement activities would be associated with higher student ratings. We used Spearman

correlations (ρ) for this study. Spearman's ρ for question eight (-0.757) was statistically significant at $p< 0.05$. The other questions in this study were not statistically significant at $p<0.05$.

Discussion

We examined a sample of introductory criminal justice course syllabi for engagement indicators that reflected those outlined by the AACU (Kuh, 2008a) and corresponding course evaluations to explore differences between student ratings and levels of course engagement. Findings suggest that student feedback is dependent on which section/ teacher provides instruction (research question 1). Further, despite the differences in enrollment, campus and class schedule across sections, results did not vary.

Consistent with introductory coursework, a high percentage of freshmen were represented in the sections included in this study (Figure 2). First year students are focal points in higher education literature, especially in the context of retention (DeAngelo, 2014). The results of this study suggest that students in sections 2 and 5 showed statistically significant differences in course evaluation ratings, including questions related to themselves as students and their instructor, when compared to other sections. Notably, both sections showed high levels of engagement opportunities, as suggested from their engagement score, as well as high percentages of freshmen enrolled in their college courses. These findings suggest that offering engagement opportunities to students is necessary in understanding the first year college experience within the classroom. Research also suggests that course structure (i.e. classroom activities, assignments) contributes to retention and recruitment, as it is required to appeal to students, motivate and structure their learning (Afros and Schryer, 2009). The differences noted across sections highlight the fact that the same course is being taught in significantly different ways as

demonstrated by the differences in engagement scores. This difference suggests further research in syllabi development within higher education departments, especially in introductory courses of predominantly freshmen students.

Researchers hypothesized that a high engagement score would be predictive of a high student rating within the course evaluations (research question 2). The results of our analysis did however not support this hypothesis. Findings suggest that as the engagement score increased, the evaluation scores do not increase. Specifically, the correlation analysis showed a negative, statistically significant correlation for Question 8. The remaining questions used in this study were not statistically significant, but there were all negatively correlated. This could suggest that students do not increase their evaluation scores of a course based on an increase of engagement activities. These findings are contradictory to other research related to engagement in introductory level courses (Kuh et al., 2008; Chambers, 2010; Gampert and Jones, 2013).

Results derived from this research question also bear application to first year students. Herrmann (2013) argues that students in their first year of college may perceive engagement within the classroom as challenging, and may prefer instructors to elicit the prescribed correct answers. Yet, students who feel they are challenged academically are more committed to their program (Messineo et al., 2007). Interestingly, we found similarities among the course evaluation questions. Correlation analysis suggests that question 3, 8 and 9, since they ask the student to provide general ratings of the instructor had similar scores. Further, similar scores were found for questions 5 and 14 that ask the student to rate the instructor specific to their own learning and then to rate themselves as participants.

Limitations

Despite its strengths at addressing this novel line of research, several limitations are acknowledged. A limitation of the current study is the use of one discipline from a single university to examine levels of engagement. Engagement in introductory coursework across other disciplines, specifically those in STEM (Science, Technology, Engineering and Mathematics) has been examined (Tytler et al., 2008; Gasiewski et al., 2012; Haak et al., 2011). Additionally, in regards to coding it was easier for the coders to code syllabi that were less detailed, suggesting the need for clear syllabi construction, especially in the area of course schedule and assignment details. Syllabi content limits the ability to get deeper details and more information (Homa et al., 2013). Since course syllabi can often change as the course progresses due to internal and external factors (i.e. enrollment numbers, current events, scheduling conflicts) this course tool may not be a strong predictor of engagement. Lastly, this study used retrospective data and was therefore limited by the data available to the researchers. We did not have access to demographic information about the instructor, individual students (only course demographic data) and other class assignments that may have been implemented in class that were not listed on the syllabus. This data may have provided further information to support our hypothesis.

Conclusions and Future Research

This study examined how course structure impacts student course evaluation ratings across introductory coursework, thus, decreasing the gap in research about student engagement in introductory college coursework. Our findings indicate that course sections of predominantly freshman students in an introductory course vary in providing engagement activities for students,

despite national recommendations (Kuh, 2008a). Efforts across numerous college campuses to effectively serve first year students include service learning, first year seminars and service learning, all of which are now standard practice (DeAngelo, 2014). As these efforts provide additional tools for first year college students, further research is needed to assess engagement across college classrooms. Assessments of active learning strategies, such as peer evaluation of group and individual projects, presentations and essays are well documented in higher education literature (Ryan et al., 2007), but provide little information on individual student perception.

Our findings suggest that students do not give a higher rating to a course which offers higher engagement activities. With the limited information provided for this study, further research is needed to find an appropriate assessment of first year college engagement. One such assessment tool, *The Thriving Quotient*, by Laura Schreiner (2010) measures the complex factors that impact student success by focusing on what students do well. This tool accesses students to not only determine academic success, but also their experiences with feelings of community and psychological well-being, which are factors in persistence to graduation and gaining maximum benefits of being in college (Schreiner 2010). If these experiences are missing from the classroom environment, stakeholders in higher education may wonder if students will continue to pursue "face to face" degrees during an influx of online education.

The higher education classroom provides an opportunity for engaging experiences that develop skills needed by students to fulfill career goals. Specifically, future studies to gather practices of introductory college course instructors would help set recommended practices for the structure of these courses. Future studies examining the course syllabus, specifically, will provide access to understanding the initial components of conversation between students and instructors. The syllabus plays a vital role in establishing effective communication between the

instructor and the student surrounding course expectations. An intentional comprehensive syllabus is one of the most important and valuable resources which can be provided to the students (Tokatlı and Keşli, 2009).

As those invested in higher education examine course content through syllabi, we may also be able to see specific teaching methods employed by those teaching first year students. By putting instructors in first-year classes who engage students in the learning process and connect with them on a personal level may allow for increased effectiveness of classroom material (Schreiner, Hulme, Hetzel, & Lopez, 2009). Research suggests that not only do we need to change the instructional method in the college classroom, but we must also facilitate student ownership in activities to promote student engagement in higher learning (Herrmann, 2013; Stefanou et al., 2013). Our findings and those of related studies (Stark, 2000) suggest a need for considerable research in the methods and communication instructors employ to promote student engagement in their introductory college courses. Further research is crucial to understanding the various ways in which students learn and why they continue to enroll in college coursework. This research may provide stakeholders in higher education the means to effectively retain first year students, thus, remove a barrier that continues to impact the future of higher education.

Appendix A

Course Evaluation Form

1. The instructor's knowledge of the subject matter appeared to be:
2. The instructor's class preparation was:
3. **The instructor's organization of this course was:**
4. The instructor's enthusiasm was:
5. **The instructor's ability to inspire me to think more deeply about the subject was:**
6. The instructor's grading criteria were clearly explained:
7. The instructor's promptness in returning tests and assignments was:
8. **The instructor's answers to student questions were:**
9. **Overall, how would you rate the instructor's effectiveness as a teacher:**
10. Overall, how would you rate the text books or reading material used in this course?
11. If you have taken other courses in the same area (i.e. other social science courses), how do you rate this course in comparison to other courses? If you have not taken other courses in this area, please mark "Not Applicable"
12. With respect to your educational experiences, did the realities of this course meet your expectations?
13. Please rate the instructor's overall ability to communicate effectively:
14. **Your EFFORT in this course was:**
15. Which of the following best describes your Cumulative GPA? (if this is your first semester in college, please leave blank)

(1) Less than 2.0 (2) 2.0-2.49 (3) 2.5-2.99 (4) 3.0-3.49 (5) 3.5-4.0

Answer options for Questions 1-14:
5=Excellent, 4=Very Good, 3= Average, 2=Weak, 1=Poor, 0=N/A

Note: Evaluation is per course and completed by students at the end of a semester.

Table 1
Student Demographics per Section

		S1	S 2	S 3	S 4	S 5	S 6	S 7
Gender	Male	11	17	18	13	21	22	10
	Female	18	22	18	13	26	25	12
Grade	Freshman	22	18	21	10	29	28	7
	Sophomore	5	9	6	10	10	8	6
	Junior	0	9	6	6	7	6	2
	Senior	2	2	3	0	1	5	7
	Not Provided	0	1	0	0	0	0	0
	*Total	29	39	36	26	47	47	22

Table 2

Tests of Between-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Observed Power[f]
sections	Question 3	15.748	6	2.625	7.649	.000	.201	1.000
	Question 5	20.937	6	3.489	6.090	.000	.167	.998
	Question 8	8.623	6	1.437	4.363	.000	.126	.981
	Question 9	12.993	6	2.165	6.663	.000	.180	.999
	Question 14	26.651	6	4.442	7.208	.000	.192	1.000

a. R Squared = .201 (Adjusted R Squared = .175)

b. R Squared = .167 (Adjusted R Squared = .140)

c. R Squared = .126 (Adjusted R Squared = .097)

d. R Squared = .180 (Adjusted R Squared = .153)

e. R Squared = .192 (Adjusted R Squared = .165)

f. Computed using alpha = .05

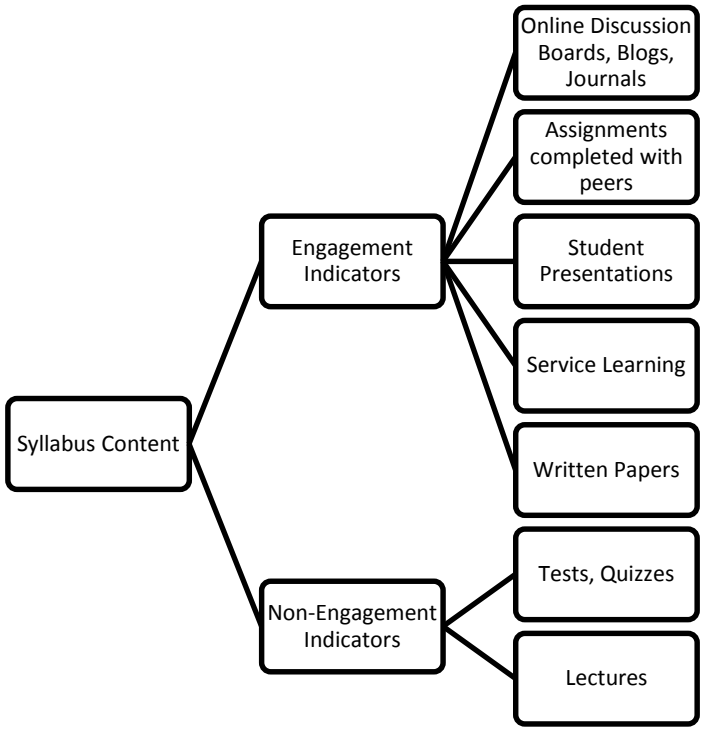

Figure 3. Syllabus Coding Rubric

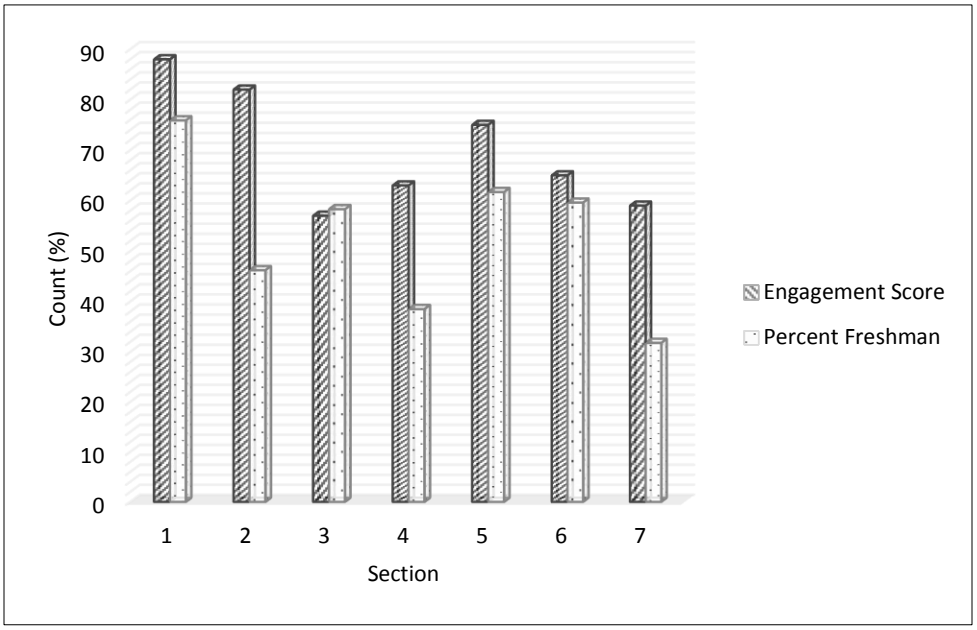

Figure 2. Engagement Score and freshmen across Sections

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Section IV

Comprehensive Examination III

Benefits of Service-Learning across Disciplines

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Abstract

This descriptive research study involves the collection of quantitative data using cross-sectional methods to measure the benefit of service-learning across multiple college disciplines. After completing service-learning and related coursework, students (n=42) completed a survey modified from the Thriving Quotient (Schreiner, 2010) and Service Learning Benefit scale (Toncar et al., 2006) to assess benefits related to personal and professional growth, among other outcomes gained from service-learning. Researchers found that students from each discipline reported benefits from service-learning experiences. However, no significant differences in service-learning benefit exist between the represented disciplines. This study provides data to support the continued implementation of service-learning in higher education.

Purpose

For decades, the graduation rate among American college students has hovered around 50% (IPEDS, 2014; Laird et al., 2008b; Lockeman and Pelco, 2013; Ishitani and DesJardins, 2003). Some researchers hypothesize that this graduation rate is related to increasing financial costs of higher education (Education, 2013; Selingo, 2013; Hacker and Dreifus, 2010). Another hypothesis argues that college students are unable to see the relationship between higher education and career outcomes (e.g., college degree, sustainable employment). Current research suggests that college student engagement in educationally purposeful activities significantly contributes to successful college and life outcomes (Hu and McCormick, 2012; Quaye and Harper, 2014; Kuh et al., 2011; Kuh, 2008b).

The purpose of this study was to investigate the benefits of service-learning across various disciplines. Specifically, the study set out to explore the impact of service-learning on students in particular disciplines. We hypothesized that the service-learning benefit would differ

across disciplines. Through the measures in this study, we expected to find differences across students who experienced service learning in areas of personal growth, professional and clinical development, which prepare students for graduation. This study provided pilot data for a larger study aimed at assessing the benefits of service-learning on lifelong learning in a sample of college graduates. Findings on service-learning outcomes across disciplines may inform tailored service-learning opportunities for students across college campuses.

Rationale

To prepare college students for a career after college, instructors are responsible for providing intentional, reflective and connected educational experiences (Youatt and Wilcox, 2008). Learning derived from life experience (i .e. experiential learning) is a stark contrast to lecture and classroom learning (Kolb, 2014; Dewey, 1938). Specifically, experiential learning directly connects the learner to the lived experience of the content studied , which is quite different to the learner who only reads about, hears about and talks about these experiences (Keeton and Tate, 1978). By the 1980s, experiential learning had become an accepted term in education (Fowler, 2008; Boyer, 1994), gaining momentum through activities coined as service-learning (Harkavy and Hartley, 2010). Rooted in experiential learning principles, service-learning provides students the ability to learn course content as they serve the community and reflect on connections between course content and their experiences in the field (Bernard et al., 1963). Further, evidence suggests that service-learning has become a popular pedagogical approach for enhancing student learning by involving college students in community service within their educational experiences (Chupp and Joseph, 2010).

Specifically, college programs across disciplines have used service-learning as an educational tool to situate student learning in communities. The service component of this type of learning differs from community service in that service-learning directly connects traditional curriculum with concern for one's community (Kaye, 2004). Service-learning is not a new approach, but has gained new interest as higher education has assumed leadership as a social system (Harnish and Bridges, 2012). Service-learning provides numerous benefits by helping students develop practical skills, learn to work with others in completing tasks, gain satisfaction in giving to their communities, and continue personal growth (Toncar et al., 2006). Additionally, students indicated development in professional skills, especially after completing service-learning experiences with other peers in a group setting (Bazyk et al., 2010; Lu and Lambright, 2010). Today many institutions are committed to community engagement and are providing increased opportunities such as service-learning to foster community engagement for students (Davis, 2013).

A clear advantage to implementing service-learning in higher education is that it is not restricted by a specific educational discipline, classroom or campus (Jacoby, 2003) and can be assessed using quantitative and qualitative research methods. Research is limited in systematically accessing the service-learning experience (Toncar et al., 2006). Currently, service-learning research is predominately measured by student and faculty reflection and lacks a consistent assessment tool to ensure educational and personal development outcomes (Maloney and Griffith, 2013; Bazyk et al., 2010). Additionally, limited research has investigated how service-learning benefits students across disciplines and how personal characteristics affect service-learning outcomes among students. While both quantitative and qualitative research offer

valuable information about student engagement outcomes from service-learning, this study aims to provide measurable, quantitative assessment.

Participants

This study was approved by the Institutional Review Board (IRB) at the University of Kansas. The research team recruited students and course instructors (mentors) from the University of Kansas who participated in or taught a service-learning course during the summer or fall semesters of 2014. Researchers used the university's website and the center responsible for service learning certification on campus, to gather names of course instructors for all service-learning courses listed for each semester. Initially, instructors from courses listed as an internship, practicum or student teaching credit on the university's website were excluded. The research team contacted 44 course instructors through publicly available university email addresses to recruit participants. Researchers communicated via email, certain inclusion criteria to the course instructors. Inclusion criteria included: (1) service-learning activity occurred more than once per semester, (2) service-learning activity occurred mainly (at least five class sessions) on-site of a community partner and (3) service-learning activity was not used for an internship, practicum or student teaching credit. Course instructors who met inclusion criteria and agreed to participate in the study were sent recruitment materials to forward to the students who participated in their service-learning course in 2014 summer and/or fall semesters.

Instruments

Researchers used The Thriving Quotient (TQ) (Schreiner, 2010) and the Service Learning Benefit (SELEB) scale (Toncar et al., 2006) to determine students' perceptions of their higher education experience and specifically, their perceptions of service-learning. Currently, the

SELEB scale and the TQ have not been used together to document the experiences across disciplines.

The TQ is a 35-item instrument that reliably (Cronbach's alpha=0.89) measures five factors to explain the element of academic, intrapersonal or interpersonal thriving in college students (Schreiner, 2010). For the purpose of this study, the research team used an additional 24 questions from the TQ related to campus involvement, personal activities and demographics.

The SELEB scale is a 32-item scale that reliably measures the benefits of service-learning (Cronbach's alpha range 0.78-0.84) related to professional, clinical and personal growth (Toncar et al., 2006).

Participants completed a cross-sectional Research Electronic Data Capture (REDCap) survey developed specifically for this purpose. REDCap is a secure, web-based application for building and managing online surveys and databases. Researchers combined the TQ, SELEB scale and additional questions to gather detailed information about the college experience, course curriculum and service-learning outcomes. Since the survey contained questions which may be perceived as sensitive, some questions contained a "prefer not to answer" option and not all questions were marked as required.

Statistical Analyses

Researchers conducted a nonparametric test since service-learning benefit was given as a rank order score of one to seven (1=not at all to 7=very much so). Researchers performed a Mann-Whitney *U* test, designed to test the null hypothesis, specifically, that the distribution of the median service-learning benefit is the same across two independent groups (Occupational Therapy/OT and Other Disciplines). Mann-Whitney *U* test is a nonparametric procedure that

does not require the groups to be of the same size (Portney and Watkins, 2008b). We reported frequencies to describe the demographic and educational information of the participants. Researchers used SPSS 20 to complete all data analyses (SPSS, 2011).

Findings

Researchers sent the survey link and instructions to 10 course mentors found eligible in participating in the study. A total of 10 course mentor participants represented 10 different programs including Journalism, Honors, Mechanical Engineering, Music Education/Music Therapy, Occupational Therapy, Visual Art, Applied Behavioral Science, Architecture, Entrepreneurship and Health. For the purpose of this study, course mentor survey data was not analyzed, but provided researchers with frequencies necessary for recruitment and course description. For recruitment purposes, course mentors sent their respective students a link to and directions for the student survey. Course mentors reported emailing the directions and survey link to a total of 200 students. Researchers excluded one participant after finding the survey to be blank. A total of 42 (21%) student participants are included in the analyses. Survey participation flow diagram is shown in Figure 1. Sample size (n) varied depending on the question analyzed since the participant was not required to answer all the questions. Researchers report specific demographic and educational information to provide a description of the study population.

Demographics and educational information. Students who answered demographic information included 30 total respondents. Seventy-seven percent of students describe themselves as Caucasian/White, and 93% report being female. The following age groups of the study population include; 21 to 25 years old (63%), while 37% are between the ages of 18 and 20. Thirty-seven percent of students reported having a household income of less than $30,000

per year. As shown in Table 1, study participants include students from the following disciplines: Architecture, Music education and Music therapy, Occupational Therapy, Women's Studies, and Other/Discipline not listed. Additionally, the study population consists of the following student classifications: Freshman (33%), Junior (3%), Senior (43%) and first-year Graduate students (20%).

Questions related to student outcomes from the college experience are necessary in understanding the student population. All students (n=40) reported full-time enrollment at the time of the survey, with 55% working towards a master's degree. Sixty-seven percent of students (n=36) reported being at least satisfied with their overall experiences with the university. Forty-three percent of students (n=40) reported "thriving most of the time" in their college experience (Schreiner, 2014). The majority (95%) of students (n=40) reported receiving mostly A's and mostly A's and B's in their coursework.

Community experiences and service-learning. Researchers found college students participate in service related opportunities in addition to traditional college coursework. Students (n=37) reported frequently (27%) and very frequently (22%) engaging in "community service" activities. Students (n=30) reported working at part-time jobs off-campus (47%), six (20%) students reported doing the same on-campus, while eight (27%) reported having no employment. Specifically related to service-learning, all students (n=33) reported participating across the fall 2014 semester (94%) and summer 2014 semester (6%).

To report the median service-learning benefit across disciplines, researchers used findings from the Mann-Whitney *U* analysis. For the purposes of the Mann-Whitney *U* analysis, researchers form two groups: OT students (n= 13) and students in other professions (n=18) to

measure the service-learning benefit. The Mann-Whitney *U* test results reveal no significant difference in the service-learning benefit between OT students (Md=5.85, n=13) and students of other disciplines (Md=5.7, n=18), *U*=103.5, z=-.541, p=.594, r=.097.

Discussion

Specific findings from the study suggest that students across disciplines benefit from service-learning participation (mean=5.75). Students reported high degrees of benefit across areas of practical skills, interpersonal skills, citizenship and personal responsibility. Demographic information allows for a better understanding of the factors that may influence service-learning benefit. The sample population lacks diversity, yet echoes national statistics. The majority (93%) of student respondents identified as female. Although this may be in part due to the disciplines represented in this study, females are filling college campuses. For example, "at a typical four-year college you'll count 127 women for every 100 men (Hacker and Dreifus, 2010: 181)." Most (77%) study participants classified themselves as "Caucasian/White" which is consistent with national data of those enrolled in college (73%) and overall population (72%) (Bauman and Davis, 2013; Bureau, 2012). Although demographic information may have a role in studying service-learning benefit, we consider the impact of service-learning across disciplines is influenced by student experience.

Various service-learning benefits exist for students across educational programs. For example, service-learning provides health education students with hands-on experiences in the community to enhance learning by supporting engagement and participation in education. (Hansen et al., 2007; Seif et al., 2014; The American Occupational Therapy Association, 2014). This connection may allow the exposure necessary in understanding the differences vital to

working within the community. Current research suggests that students in health professions gain benefits across areas of diversity, such as cultural competence, practice and advocacy (Flinn et al., 2009; Holsapple, 2012). This study informs service-learning research by arguing that since similarities exist across disciplines, a shift in research methodology may be needed to understand the meaning of service-learning outcomes for students.

Experiences as noted through reflective writing may add depth to the various benefits for service-learning. Reflection is a vital and ongoing process of service-learning that connects learning to experience through awareness, positive cognitive outcomes and personal growth (Kaye, 2004). Specifically, reflection allows students to connect classroom learning with community experiences by increasing the development of problem solving, critical thinking, and receptiveness to real world concepts (Eyler, 2002; Hansen et al., 2007). Further, service-learning addresses educational stakeholders' concerns about the lack of connection between classroom curriculum and lifelong learning and participation (Eyler, 2002).

As service-learning develops as an educational tool for students, it is crucial to implement consistent models for students, instructors and administrators. The types and models of service-learning provide a framework, which may be useful in examining benefits across college campuses, disciplines and individual courses. Instructors have the choice to use various types of service-learning when situating students in the community such as, direct service, indirect service and advocacy (Heffernan and Compact, 2001; Responsibility, 2015). To establish intentional relationships with the community, instructors implement specific models of service-learning. The following models may be used independently or in combination: "pure" service-learning, discipline-based service-learning, problem-based service-learning, capstone courses, internships, and undergraduate community-based action research (Responsibility, 2015;

Heffernan and Compact, 2001). Service-learning is a complex pedagogical tool with various parts embedded in theory, practice and implementation (Felten and Clayton, 2011). This complexity allows for flexibility in the establishment of specific outcomes.

Limitations

Our study has several limitations. First, the course mentors recruited the student population, which limited the researchers' recruitment strategies with potential student participants. Direct recruitment strategies may make it possible for students to decide about participation; a common data base for all service-learning would make this type of recruitment possible. When researchers can track their contact with students, they can ensure consistency of messages across all potential participants. Secondly, participants had the freedom to leave sensitive questions blank, which changed our overall response pattern. Additionally, researchers adapted some questions by creating groups (e.g., age), which may have limited the ability to understand age correlated to service-learning. Future research should look at the correlation of age and service-learning benefit to better understand how age impacts the service-learning experience (Lu and Lambright, 2010). Lastly, researchers created two groups for analysis due to unequal distribution of participants across disciplines. Current studies employed similar methodological strategies (Seif et al., 2014), but further research may consider additional strategies.

Implications

A study of 217 college students participating in service-learning revealed higher satisfaction with their course, higher levels of academic learning related to their field and community than the 324 students not participating in service-learning (Moely et al., 2002). This

finding suggests the importance of researchers to connect service-learning benefit to the measurement of overall academic learning. By connecting both outcomes, educators bridge service-learning activity outcomes and traditional course curriculum outcomes. Measurable scales, such as the SELEB scale, quantify the benefit of service-learning; when combined with student reflections may provide evidence to advance service-learning quality with mixed methods designs. To effectively measure the strength and duration of service-learning effects, future research might also link to other college outcomes (retention, career choices and community service) as well as evaluations unrelated to the student's grade in the course (Moely et al., 2002; Holsapple, 2012). Measuring effectiveness of higher education methods must also extend past graduation, such as studies related to the impact of service-learning on employment choices and career trajectories.

Since students in our study report similar levels of service-learning benefit across various disciplines, researchers might also focus on interprofessional opportunities. Further, service-learning experiences may help prepare students for a successful transition into their career (Bazyk et al., 2010). For example, Seif et al. (2014) found that students who participated in service-learning within interprofessional settings reported increased team collaboration and clinical reasoning skills. Future research may support interprofessional curriculum as a key piece to service-learning.

Limited research shows that certain types and models of service-learning may facilitate specific outcomes for students, course instructors and community partners (Jacoby, 2003; Brown and Roodin, 2001; Meyers, 2009). If future studies about service-learning employed established models, it would be easier to compare findings across studies and partnerships (Felten and Clayton, 2011; Furco et al., 2012; Bazyk et al., 2010; Torres et al., 2000).

Conclusion

In conclusion, those involved in higher education have a distinct responsibility to engage students in activities that foster growth in professional development, cultural awareness and civic responsibility in addition to their responsibilities for curricular content. This study informs stakeholders in higher education of the value of service-learning as a tool for student engagement. Students across disciplines highly benefit from service-learning activities, which allows for the opportunity to connect course curriculum to lived experiences. Service-learning may be an integral part of the connection between higher education, community involvement and career development.

Notes

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Figure 4. Flow of Study Participants

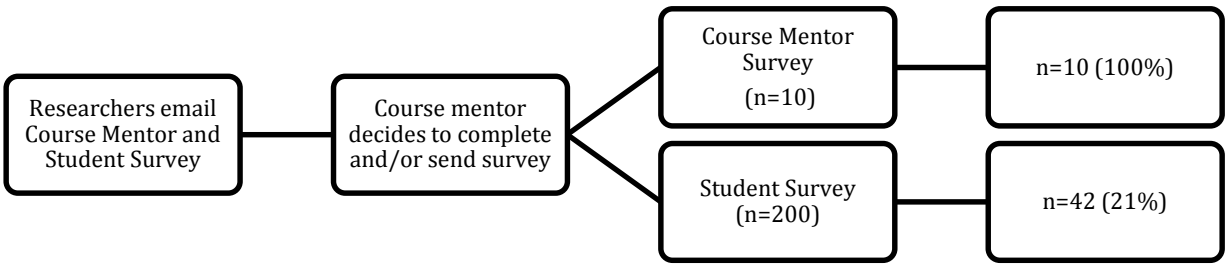

Table 1

Disciplines of Student Participants

Course Disciplines	Frequency	Percent
Architecture	3	9.1
Music Education and Music Therapy	12	36.4
Occupational Therapy	14	42.4
Women's Studies	3	9.1
Other Course/ Department not listed	1	3
Total Respondents	33	

Section V

Dissertation Study

Exploring the Impact of Service Learning on Interprofessional Collaborative Practices of Occupational Therapists

Lindsey Jarrett

Background

In higher education, the concept of engagement as an effective educational practice began in 1932, became popular in the 1970s and is now a term used to assess how a student is involved in learning activities (Kuh, 2003; Kuh, 2008; Pike, Kuh, & McCormick, 2011). Engagement in a classroom can be defined as intentional, reflective and connected educational experiences (Youatt & Wilcox, 2008) that foster a student's lifelong learning with faculty, peers, their community and themselves. Stakeholders in higher education utilize a wide variety of engagement activities inside and outside of the classroom as a measure of institutional quality (Laird, Chen, & Kuh, 2008). Specifically, over the past decade, higher education faculty have started utilizing a concept known as experiential learning, which is learning derived from lived experience, as a form of engagement.

Rooted in experiential learning principles, service learning (SL) is a popular educational tool that provides students the ability to learn course content as they serve the community and reflect on connections between course content and their experiences in the field (Celio, 2011; Opazo, Aramburuzabala, & García-Peinado, 2014). Service learning as a method of teaching combines clinical and academic skills with community service into one educational experience (Housman, Meaney, Wilcox, & Cavazos, 2012). Service learning provides numerous benefits to students regardless of their discipline (Jarrett, Dunn, Tomchek, Reynolds, & Mercer, in press) including development of practical skills, ability to work with others in completing tasks, satisfaction in giving to their communities, and continued personal growth (Toncar, Reid, Burns, Anderson, & Nguyen, 2006). Further, students also report development in professional skills, especially after completing service learning experiences with other peers in a group setting that functions as a preparatory activity to successfully transition into a career (Bazyk, Glorioso,

Gordon, Haines, & Percaciante, 2010; Lu & Lambright, 2010). To date, research in service learning has consistently cited benefits for students when measured during or shortly after the service learning experience (Bazyk et al., 2010; Maloney & Griffith, 2013; Toncar et al., 2006). Research on the impact of service learning on post-graduation career outcomes, however, is limited. This study aims to address the impact of service learning on specific interprofessional collaborative skills perceived by occupational therapists practicing in their field.

According to the Accreditation Council for Occupational Therapy Education (ACOTE) standards, service learning is a recommended practice across programs and is a core priority in Occupational Therapy (OT) practice and education (AOTA, 2014). Occupational Therapy educators have long been promoters for team collaboration within their profession and with other health professionals (Schreiber et al., 2014), which has assisted in the development of interprofessional education curricula throughout healthcare education. Specifically, this transformation in occupational therapy curriculum provides an opportunity to "enhance the therapists' abilities to interact, collaborate, advocate, and negotiate with other health care professionals (Brown, Crabtree, Mu, & Wells, 2015, p. 7)." Students who experience service learning within occupational therapy curricula gain critical thinking and problem solving abilities as well as exposure to other core competencies like diversity, health promotion, community issues, social justice and citizenship (Flinn, Kloos, Teaford, Clark, & Szucs, 2009; Holsapple, 2012). Additionally, when these experiences are embedded in a participatory, collaborative and coordinated approach with shared decision-making around health and social issues, the practitioner is engaging in interdisciplinary collaborative practice (Orchard, Curran, & Kabene, 2009; Orchard, 2010). With healthcare providers more frequently functioning in collaborative models that integrate care from multiple disciplines across settings, it seems crucial that OTs

gain experience in interprofessional and collaborative practices during their entry level education; service learning is an important option because it links OT students to a wider range of authentic communities rather than only traditional OT fieldwork options.

Interprofessional collaborative practice is when multiple health workers from different professional backgrounds work together with patients, families, caregivers and communities to provide the highest quality of care (Mitchell et al., 2012; Moyers & Metzler, 2014; Carole Orchard & Rykhoff, 2015; WHO, 2010) .Interprofessional collaborative practices have been limited in some healthcare and community settings (Melnyk, Fineout-Overholt, Gallagher-Ford, & Kaplan, 2012), even though such an approach has been shown to improve client outcomes, e.g. (Reeves, Perrier, Goldman, Freeth, & Zwarenstein, 2013). For example, interprofessional approaches to healthcare have improved outcomes in patient satisfaction (Brown, Boles, Mullooly, & Levinson, 1999), reduction of clinical error rates of emergency department teams (Morey et al., 2002), and mental health practitioner competencies related to the delivery of patient care (Bashir et al., 2000). Although occupational therapy practice is strengthened when implemented through an interprofessional approach, previous studies have measured effectiveness with primarily qualitative, e.g. (Moyers & Metzler, 2014) and small sample, e.g. (Rose et al., 2009) research. Information regarding current interprofessional practices in OT will inform us how to better prepare our OT students to practice in interprofessional teams across healthcare and community settings.

The purpose of this study is to investigate the relationship between past service learning experiences and current interprofessional practices of OTs. Previous studies show students who have participated in service learning report gains in interprofessional skills (Seif et al., 2014). The study team used interprofessional collaborative practices as defined by the Assessment of

Interprofessional Team Collaboration Scale (AITCS) (Orchard, King, Khalili, & Bezzina, 2012). These practices include partnership/shared decision making with other professionals, cooperation among team members across settings and coordination of client care among healthcare teams (Figure 1). The objectives of this study were to (1) examine the impact of service learning (SL) on partnership/shared decision making; (2) examine the impact of service learning on cooperation and (3) examine the impact of service learning on coordination. The study team hypothesized that higher hours of service learning will predict higher rates of partnership/shared decision making, cooperation and coordination for OTs who participated in service learning.

Methods

Design

We used an online survey to conduct a prospective, cross-sectional study of licensed Occupational Therapists (OTs). Participants completed a Research Electronic Data Capture (REDCap) survey developed specifically for this purpose. REDCap is a secure, web-based application designed to support data capture for research studies, providing: 1) an intuitive interface for validated data entry; 2) audit trails for tracking data manipulation and export procedures; 3) automated export procedures for seamless data downloads to common statistical packages; and 4) procedures for importing data from external sources (Harris et al., 2009). Study data were collected and managed using REDCap electronic data capture tools hosted at the University of Kansas. Participants were expected to fill out the electronic survey, though paper based surveys were made available upon request.

Recruitment

Licensed OTs in the state of Kansas were recruited for the study. As of March 2015, the Kansas Board of Healing Arts (KBHA) reported 1,613 licensed OTs in the state of Kansas. The study team obtained email addresses for these licensed OTs through a secure email from the KBHA, which were subsequently entered into REDCap. The online survey link was sent directly to the emails of OTs using a secure survey invitation tool on REDCap. Participants were reminded 4 times before access to the survey was closed. We also posted the online survey link on the following Facebook pages: The University of Kansas Occupational Therapy Education, Kansas Occupational Therapy Association, and the American Occupational Therapy Association's online community of groups and forums (*OTConnections*). Participants could only post survey responses one time from the social media links.

Measures

We measured interprofessional collaborative practices using the Assessment of Interprofessional Team Collaboration Scale (AITCS) (Orchard et al., 2012), which is a 37 item assessment that includes three subscales (partnership/shared decision making, cooperation and coordination) on a 5 point Likert Scale (5=always, 4=most of the time, 3=occasionally, 2=rarely, 1=never). The AITCS is a reliable (Cronbach's $\alpha = .98$) and valid measure which has been used by researchers across various healthcare professions (Orchard et al., 2012; Walters, Robertson-Malt, & Stern, 2015). The definitions of each subscale and their respective questions/items can be found in Table 1. We collected demographic information (i.e., gender, race, ethnicity), as well as, non-identifiable information from respondents, including type of work setting, community and years in practice. All respondents were asked from which university they received their

degree and how many hours of fieldwork they completed as part of their program, which is a common requirement of Occupational Therapy Education.

To address service learning, the respondents entered the number of hours of service learning they completed as part of their college coursework, overall satisfaction with their service learning experience, and qualitative feedback on their experience. We used the following definition for service learning: a method of teaching that combines clinical and academic skills and community service into one experience (Housman et al., 2012). For the purpose of this study, service learning does not include hours participating in fieldwork, AmeriCorps, ROTC, or other volunteer activities not connected with classroom curriculum. For those who did not participate in service learning during their university education, they were asked questions about their participation in other activities similar to service learning (i.e. student organizations on campus, campus supported athletic team, community service, ROTC, Jumpstart, Other Community Project, unpaid work, internship).

Statistical Analyses

We reported frequencies to describe the demographic, practice and professional setting information of the participants. The study team ran correlational analyses to examine associations between scales of the AITC measure. We used non-parametric tests to examine the impact of service learning on interprofessional collaborative practices (as measured by AITCS) to answer specific aims 1, 2, and 3. Specifically, we used a Mann-Whitney U test, designed to test the null hypothesis, that the distribution of interprofessional collaborative practices are the same across two independent groups (OTs with service learning/OTs without service learning). Mann-Whitney U test is a nonparametric procedure that does not require the groups to be of the

same size (Portney & Watkins, 2008). Since we assumed there is a monotonic relationship between service learning hours and interprofessional collaborative practices, the study team used Spearman's rank order correlations to examine the association of service learning hours and interprofessional practices to answer specific aims 1a, 2a, and 3a. The software SPSS (version 23) was used for comparative analyses (SPSS, 2014).

Results

The study team distributed the survey two different ways, by sending a survey link via email and posting the survey link on the following Facebook pages: University of Kansas Occupational Therapy Education, Kansas Occupational Therapy Association, and the American Occupational Therapy Association's online community of groups and forums (*OTConnections*). A total of 1,536 OTs were sent the survey link via email and an additional 639 (approx.) participants had access to the link on the Facebook pages. The survey participation flow diagram is shown in Figure 2. Some email addresses were invalid (48) along with one person who shared with the research team that they recently retired and were subsequently removed from the survey participant list. The study team opened the survey in July 2015 and it remained open for seven weeks. We also sent reminder emails approximately every two weeks, or a total of four times. A total of 422 participants (20% response rate) opened the survey, 101 partially completed the survey and 321 people completed the survey in its entirety. Out of those who partially completed the survey, the study team removed 43 participants who only completed the first three questions and exited the survey, reaching a total sample size of 379 survey participants.

Study Population Characteristics. As shown in Table 2, the study team used cross tabulation to examine frequencies across the Occupational Therapists with SL and Occupational

Therapists with no SL. The majority of the study population reported being female (92%) and white (90%). The majority of OTs are licensed in Kansas (65%), work in urban (28%) or suburban (37%) communities, and practice in medical (49%) and school settings (20%).

The sample of Occupational Therapists included new therapists to practice (3 months new) and seasoned practitioners of 52 years, with an average of 17.93 (SD=11.49) years of experience across the 353 OTs that answered the question. The study team used a histogram to visualize the distribution of their years of practice, calculated using years with months added as a decimal (e.g. 12.2) shown in Figure 3. We ran Spearman's rank-order correlation to determine the relationship between years of practice and interprofessional collaborative practice items from the AITCS. Results indicated an inverse relationship between years of practice and patient centered process of care (P12), r (317) = -.119, p=.03, patient centered care (P37), r (317) = -.110, p= .05 and inclusion of patient (COORD29), r (306) = -.118, p=.04. Additionally, a total of 377 people noted they participated in field work hours with a minimum of 40 and a maximum of 1,560 hours (mean=17.93, SD=11.49). The study team also ran Spearman's rank-order correlation to examine the relationship between field work hours and interprofessional collaborative practice items from the AITCS. Results indicated a positive correlation for goal agreement (P7), r (323) = .115, p=.038).

A total of 173 OTs reported that they participated in SL, and 162 of those provided their total number of SL hours (>1) they experienced as a part of their OT education. A large proportion of respondents reported receiving their education at a university in the state of Kansas (69%) with other respondents in the state of Missouri (17%) and in other states (14%). The study team found significant outliers (e.g. 3600 hours) in the hours of service learning (M=103.66, SD= 249.58) reported and removed the outliers (two standard deviations above the mean) to run

further analyses. This change resulted in the removal of 6 participants, a new mean of 57.05 hours and an SD of 83.32. Additionally, for those who participated in service learning, OTs reported their satisfaction in their service learning experience with scores ranging from 3-100 (scale=0, Dissatisfied-100, Extremely Satisfied), with an average score of 70.3 and a standard deviation of 19.36.

Impact of Service Learning (SL) on AITCS items. We excluded an additional 49 respondents from further analyses because they had not entered any information into the main assessment (AITCS), leaving a new total of 330 participants for analyses to answer the research questions. In order to determine potential differences between participants that did not complete the assessment (n=49) versus those that did (n=330), the study team used descriptive statistics. We found little difference between these two groups and concluded the missingness is of a random nature, for example respondents had a similar distribution of service learning experience (43% service learning, 57% no service learning) and comparative work experience with an average of 24.5 years of practice. The final sample (n=330) included 152 (46%) OTs who participated in service learning and 178 (54%) who did not participate in service learning. Across the items of the AITCS scale, specifically analyzing the combined scores for each category (n=330) we found an average sum score of 76.7 for partnership/shared decision making items, average sum score of 44.52 for Cooperation and an average sum score of 24.82 for Coordination.

To answer the research questions 1-3 (impact of service learning on interprofessional collaborative practices) the study team ran a Mann-Whitney U test to determine if there were differences in interprofessional collaborative practices between OTs who completed Service Learning and OTs who did not complete Service Learning. We conducted a nonparametric test because interprofessional collaborative practices as measured by AITCS was given as a rank

order score of one to five (1=never to 5=always) and despite a large sample size, the Shapiro-Wilks test ($p<.05$) indicated the data was not normally distributed. As shown in Table 3, the Mann-Whitney U test results revealed significant differences in scores for 6 interprofessional collaborative practice (AITCS) items. The study team created concepts to briefly describe each item in Table 3. Results indicate that OTs with SL experience reported significantly higher scores for the items related to agreement of goals, resolving conflicts, leadership change, mutual resolution, boundaries and patient centered care, than the group without service learning experience.

To answer research questions 1a-3a, the study team ran Spearman rank correlations for service learning hours and assessment items (Table 4). We used Spearman's rank order correlation coefficient because the SL hours' variable is interval (i.e. range not including zero) and the AITCS scores are ordinal (Likert scale 1-5), which violates the assumption of the Pearson correlation. We hypothesized that as service learning hours increase, interprofessional collaborative practice scores increase. Since there were significant outliers for service learning hours, we also ran correlations with 2 standard deviations (499.16) above the mean (103.66) removed. As in the previous analyses, we created concepts to briefly describe each item in Table 4. Researchers found that hours of service learning and certain AITCS items in the areas of strategy, inclusion, honesty and trust are correlated (Table 4), specifically a positive correlation between SL hours and patient inclusion.

Discussion

The main findings from this study are complimentary to current research in the field and support similar considerations for future practice in healthcare education. Specifically, novel findings from this study suggest that service learning impacts current interprofessional

collaborative practices of OTs. Those who experienced service learning reported higher scores for the items related to agreement of goals, resolving conflicts, leadership change, mutual conflict resolution, boundaries and patient centered care than the group without service learning experience (Table 3). These findings are consistent with the five principles of team-based health care, created by the Best Practices Innovation Collaborative of the Institute of Medicine (IOM) Roundtable on Value & Science-Driven Health Care in collaboration with eleven teams across the nation (Mitchell et al., 2012). Findings from this study and other healthcare studies, present the concept of shared leadership (Laporta, Burns, & Doig, 2005; Linton & Farrell, 2009; Orchard & Rykhoff, 2015; Pearce & Sims, 2001) which promotes temporary leaders across teams depending on the task, knowledge, abilities and skills of the team members. Similar literature has evaluated the concept of collaborative leadership (Linden, 2003; Orchard & Rykhoff, 2015; Raelin, 2006) which utilizes conversation across team members to solve problems and create strategies for effective intervention planning. For example, a master's-level program in Canada encourages OT students to keep a professional portfolio, organize discussions with self-selected mentors and meet with interprofessional team members regularly (Hébert et al., 2013). Training and resources around shared and collaborative leadership across healthcare teams may be valuable (Raelin & Coghlan, 2006).

Another main finding of this study suggests hours of service learning are related to interprofessional collaborative skills, specifically in the areas of strategy, honesty, trust and inclusion. The findings from this study also compliment recent service learning and OT education research. For example, students who participated in service learning, learned the value of establishing trust with their clients, respecting personal and client boundaries, confident clinical reasoning and client-centered care (Dhans et al., 2015; Hanson, 2013; Maloney &

Griffith, 2013). These findings are congruent with the core values found in highly effective healthcare teams (Mitchell et al., 2012), suggesting service learning adds significant value to healthcare teams. In OT education, service learning can be utilized a field work experience for students. Specifically, for field work hours, the findings suggest that OTs with more hours of field work report higher scores in goal agreement. Research suggests that fieldwork experiences provide OTs with professional skill development that progress as levels of fieldwork experience increases (AOTA, 2009; Evenson, Roberts, Kaldenberg, Barnes, & Ozelie, 2015). Additionally, a recent study conducted through focus groups, found master's level OT students actively chose to focus on their clients' values, which was modeled by their teachers and fieldwork educators (Hanson, 2013; Ripat, Wener, & Dobinson, 2013). These findings suggest that service learning may have utility within fieldwork experiences, as both experiences are beneficial for OT students.

With 110,520 OTs (BLS, 2015) working in medical, school and community settings, it seems necessary to prepare practitioners for interprofessional collaborative practice with other high level practitioners, families and patients. These practices can be fostered by a student's educational experience, prior to professional practice. Several institutions that provide healthcare education are beginning to institute more opportunities of interprofessional education (IPE) where multiple (two or more) professions learn with, from, and about each other in the hopes of increased collaboration and quality of care (Infante et al., 2015; WHO, 2010). As OT educators embrace interprofessional and collaborative practice curricula, a shift in practice will need to occur for those OTs with extensive experience. Findings from this study suggest years of practice may impact interprofessional collaborative practices. For example, OTs with less years of experience reported higher levels of patient centered process of care, patient-centered care and

patient inclusion. This finding may be attributed to the more recent emphasis in healthcare education on patient centered care in meeting the health care needs of patient populations (Brown & Diamond-Burchuk, 2013; Lévesque, Hovey, & Bedos, 2013) and how this approach to care allows OTs to be leaders, as other professions embrace the approach (Cyr, 2015).

Findings from this study suggest service learning is a highly satisfactory experience for students across those who participated in SL, which is noted throughout the literature (Bazyk et al., 2010; Celio, Durlak, & Dymnicki, 2011; Jones, McAllister, & Lyle, 2015). By providing service learning experiences to students, OT educators have the opportunity to convey important concepts to be learned and strategies to empower students to integrate and apply them effectively in future practice (Hébert et al., 2013; Molenaar et al., 2009). Findings from this study and current research, e.g. (Infante et al., 2015) suggest service learning has a long term impact on an OTs career, and is an effective IPE tool to provide the foundation for interprofessional collaborative practice. Service learning is becoming widely accepted by educators and a beneficial educational tool for students, which exemplifies service learning as a reliable and a highly valuable tool to enhance interprofessional collaborative practice.

Limitations

This study has several limitations to consider that guide future research efforts. The demographic and practice related findings of this study are concurrent with national OT data, with the sample primarily consisting of white female OTs who work in medical settings. This study population seems to underrepresent school setting, which is also over 20% of the national OT workforce (AOTA, 2010). Future studies are needed to examine interprofessional collaboration within school settings. Also, this survey was available during the summer months,

which may have consequently excluded OTs who practice during the school year. Another limitation of this study is that the AITCS measure has not been used to examine the relationship of interprofessional collaborative practice and service learning, especially in the field of Occupational Therapy. Further research is needed to determine how service learning impacts interprofessional collaborative practice, specifically in the OT field. Additionally, since service learning is a new practice, we have yet to determine long term impacts and possible correlations to those who participate in similar activities, but who have been in the field after service learning implementation into OT education. Further research is needed to inform similarities of service learning with other active learning strategies in higher education that promote interprofessional collaboration.

Conclusion

The demand for interprofessional collaboration within health professions has long been recognized (Barr, 2002; Wintle, Loiselle, & Chamberlain, 2013). As OTs continue to work in settings that require collaboration, it is vital that OT educators prepare students for these experiences. Research suggests that teaching approaches should be congruent with practice expectations and their application should result from pedagogical and disciplinary reflection with all stakeholders (students, professors and practitioners) in order to provide relevant training for the OT profession (Hébert et al., 2013). Findings from this and other current studies support service learning as a strong interprofessional education tool that provides specific outcomes important to occupational therapy practice. Interprofessional collaborative education and practice are an inevitable staple in today's healthcare system, further amplifying the need for OT education which instills such values for practice.

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Table 1

Assessment of Interprofessional Team Collaboration Scale (AITCS) Subscales, Definitions and Items

Subscale	Definition	Questions/Items
Coordination (7 items)	*When providers work together to achieve mutual goals given appropriate resources and effective communication.*	✓ Apply a unique definition of interprofessional collaborative practice to the practice setting ✓ The goals that team members agree upon are equally divided among the team ✓ Encourage and support open communication, including the patients during team meetings ✓ Use and agree upon process to resolve conflicts ✓ The leader of the team varies depending on the needs of our patients ✓ Select the leader for our team ✓ Team members openly support inclusion of the patient in their team meetings
Cooperation (11 items)	*When a group of mutually respected health providers work together to achieve mutual goals.*	✓ Share the power with each other ✓ Help and support each other ✓ Respect and trust each other ✓ Are open and honest with each other ✓ Make changes to their functioning based on reflective reviews ✓ Strive to achieve mutually satisfying resolution for differences of opinions ✓ Understand the boundaries of what each other can do ✓ Understand that there are shared knowledge and skills between health professions ✓ Exhibit a high priority for gaining insight from patients about their wishes/desires ✓ Create a cooperative atmosphere among the members when addressing patient situations ✓ Establish a sense of trust among the team members
Partnership/ Shared Decision Making (19 items)	*When patients and families are considered partners in their care and share in health care decisions.*	✓ Establish Agreements on goals for each patient we care for ✓ All team members are committed to the goals set out by the team ✓ Include patients in setting goals for their care ✓ Listen to the wishes of their patients when determining the process of care chosen by the team ✓ Team members meet and discuss patient care on regular basis ✓ There is support from the organization for teamwork ✓ Team members coordinate health and social services (financial, occupation, housing, connections with community, spiritual) based upon patient care needs ✓ Team members use a variety of communication means (e.g. written messages, e-mail, electronic patient records, phone, informal discussion, etc.) ✓ There is consistent communication with team members to discuss patient care

	✓ All members of our team are involved in goal setting for each patient ✓ Listen to and consider other members' voice and opinions/views in regards to individual care plan process ✓ When care decisions are made, the leader strives for consensus on planned processes ✓ Feel a sense of belonging to the group ✓ Team members establish deadlines for steps and outcome markers in regards to patient care ✓ Team members jointly agree to communicate plans for patient care ✓ Team members consider alternative approaches to achieve shared goals ✓ Encourage each other and patients and their families to use the knowledge and skills that each of us can bring in developing plans of care ✓ The focus of teamwork is consistently the patient ✓ Work with the patient and his/her relatives in adjusting care plans

Note. Adapted from Orchard, C. A., King, G. A., Khalili, H., & Bezzina, M. B. (2012). Assessment of interprofessional team collaboration scale (AITCS): development and testing of the instrument. *Journal of continuing education in the Health Professions*,*32*(1), 58-67.

Table 2

Demographic Characteristics of Occupational Therapists based on participation in Service Learning

	SL Group (n=173)		No SL Group (n=206)		Total (N=379)	
	n	%	n	%	N	%
Demographic Characteristics						
Gender						
Female	158	91%	189	92%	347	92%
Male	15	9%	17	8%	32	8%
Race/Ethnicity						
White	152	88%	189	92%	341	90%
Black or African American	8	5%	3	1%	11	3%
Hispanic or Latino	3	2%	3	1%	6	2%
Other	7	4%	4	2%	11	3%
Prefer not to respond	1	<1%	4	2%	5	1%
State of Practice						
MO	7	4%	5	2%	12	3%
MO and Other States	0	0	2	1%	2	<1%
KS	110	64%	136	66%	246	65%
KS and Other States	3	2%	3	1%	6	2%
MO and KS	30	17%	37	18%	67	18%
Other States	9	5%	15	7%	24	6%
Type of Community of Practice*						
Urban	45	26%	60	29%	105	28%
Suburban/Semi-Urban	60	35%	81	39%	141	37%
Densely-settled Rural	6	3%	14	7%	20	5%
Rural	20	12%	20	8%	40	10%
Frontier	0	0	1	<1%	1	<1%
Multiple Types	29	17%	20	10%	49	13%
Type of Practice Setting*						
Medical	85	49%	102	49%	187	49%
School	30	17%	46	22%	76	20%
Medical & School	11	6%	5	2%	16	4%
Community	34	20%	45	22%	79	21%

*Note. SL=Service Learning; MO= Missouri; KS= Kansas; *Type of Community of Practice: Missing data=23; Type of Practice Setting: Missing data=23*

Table 3

Mann-Whitney U Test Results (AITCS Items and Service Learning)

	SL_ YN	n	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	*Z*	*p*
Agreed Goals	No	168	148.20	24898.00				
(Coord11)	Yes	145	167.19	24243.00				
	Total	313			10702.000	24898.000	-1.983	.047
Resolve Conflicts	No	175	151.52	26515.50				
(Coord14)	Yes	146	172.37	25165.50				
	Total	321			11115.500	26515.500	-2.197	.028
Leader Change	No	170	147.98	25156.00				
(Coord27)	Yes	144	168.74	24299.00				
	Total	314			10621.000	25156.000	-2.105	.035
Mutual resolution	No	177	154.47	27342.00				
(Coop9)	Yes	151	176.25	26614.00				
	Total	328			11589.000	27342.000	-2.429	.015
Boundaries	No	177	154.95	27426.00				
(Coop15)	Yes	148	172.63	25549.00				
	Total	325			11673.000	27426.000	-1.935	.053
Patient Centered	No	177	154.97	27430.50				
Care (P37)	Yes	150	174.65	26197.50				
	Total	327			11677.500	27430.500	-2.057	.040

A. Grouping Variable: SL_YN. SL_No=Service Learning Yes/No

Note. COORD 11 The goals the team members agree upon are equally divided among the team. COORD14 Use and agree upon process to resolve conflicts COORD27 The leader for the team varies depending on the needs of our patients COOP9 Strive to achieve mutually satisfying resolution for differences of opinions COOP15 Understand the boundaries of what each other can do P37 Work with the patient and his/her relatives in adjusting care plans

Table 4
Correlations (Spearman's Rho) for Service Learning Hours and AITCS Items

			Strategy (P32)		*Patient Inclusion* (COORD 29)			
		SL Hours	Original Group	*2x Outliers Removed*	Original Group	*2x Outliers Removed*	*Honesty (COOP5) 2x Outliers Removed*	*Trust (COOP19) 2x Outliers Removed*
SL Hours	Correlation Coefficient	1	-.202**	-.224**	-.220**	.265**	-.175*	-.161
	Sig. (2-tailed)		0.015	0.008	0.009	0.002	0.038	0.058
	N	148	144	138	141	135	141	140
Strategy (P32)	Correlation Coefficient	-.202*	1	1	.230**	.233**	.391**	.472**
	Sig. (2-tailed)	0.015			.006	.007	0	0
	N	144	144	138	139	133	137	138
Patient Inclusion (COORD 29)	Correlation Coefficient	.220**	.230**	.233**	1	1	.238**	.288**
	Sig. (2-tailed)	0.009	0	.007			.006	.001
	N	141	139	133	141	135	134	134
	SL 2x removed							
Honesty (COOP5)	Correlation Coefficient	-.175		.391**		.238**	1	.517**
	Sig. (2-tailed)	.038		0		.006		0
	N	141		137		134	141	139
Trust (COOP19)	Correlation Coefficient	-.161		.472**		.288**	.517**	1
	Sig. (2-tailed)	.058		0		.001	0	
	N	140		138		134	139	140

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).
Note. SL= Service Learning
P32 Team members establish deadlines for steps and outcome markers in regards to patient care, COORD29 Team members openly support inclusion of the patient in their team meetings, COOP5 Are open and honest with each other, COOP 19 [approaching] Establish a sense of trust among the team members

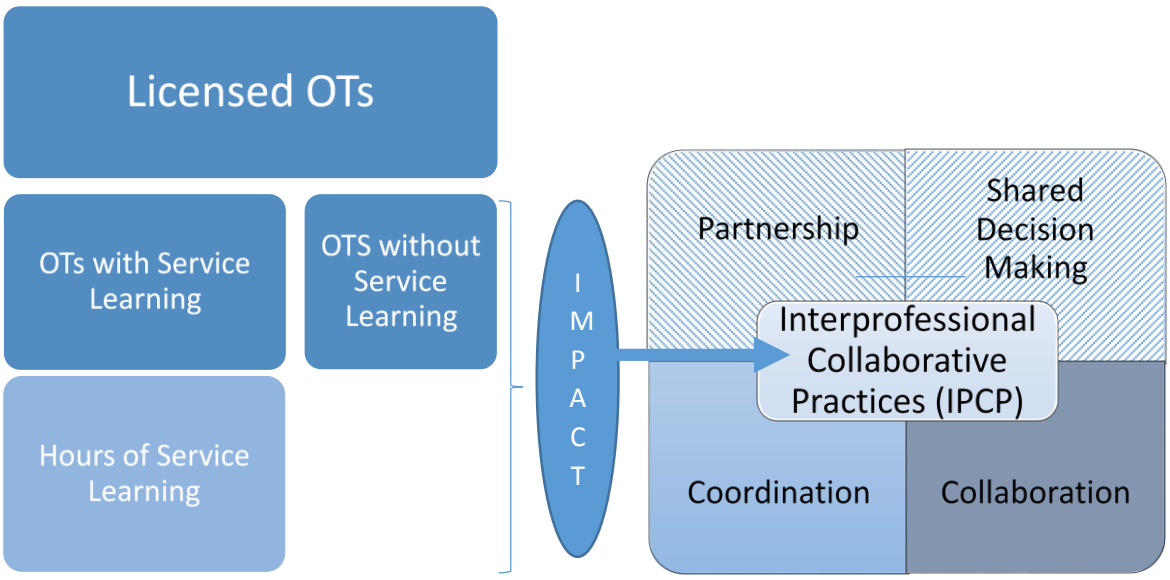

Figure 1. Study design for examining the impact of Service Learning on Interprofessional Collaborative Practices (IPCP) among Occupational Therapists.

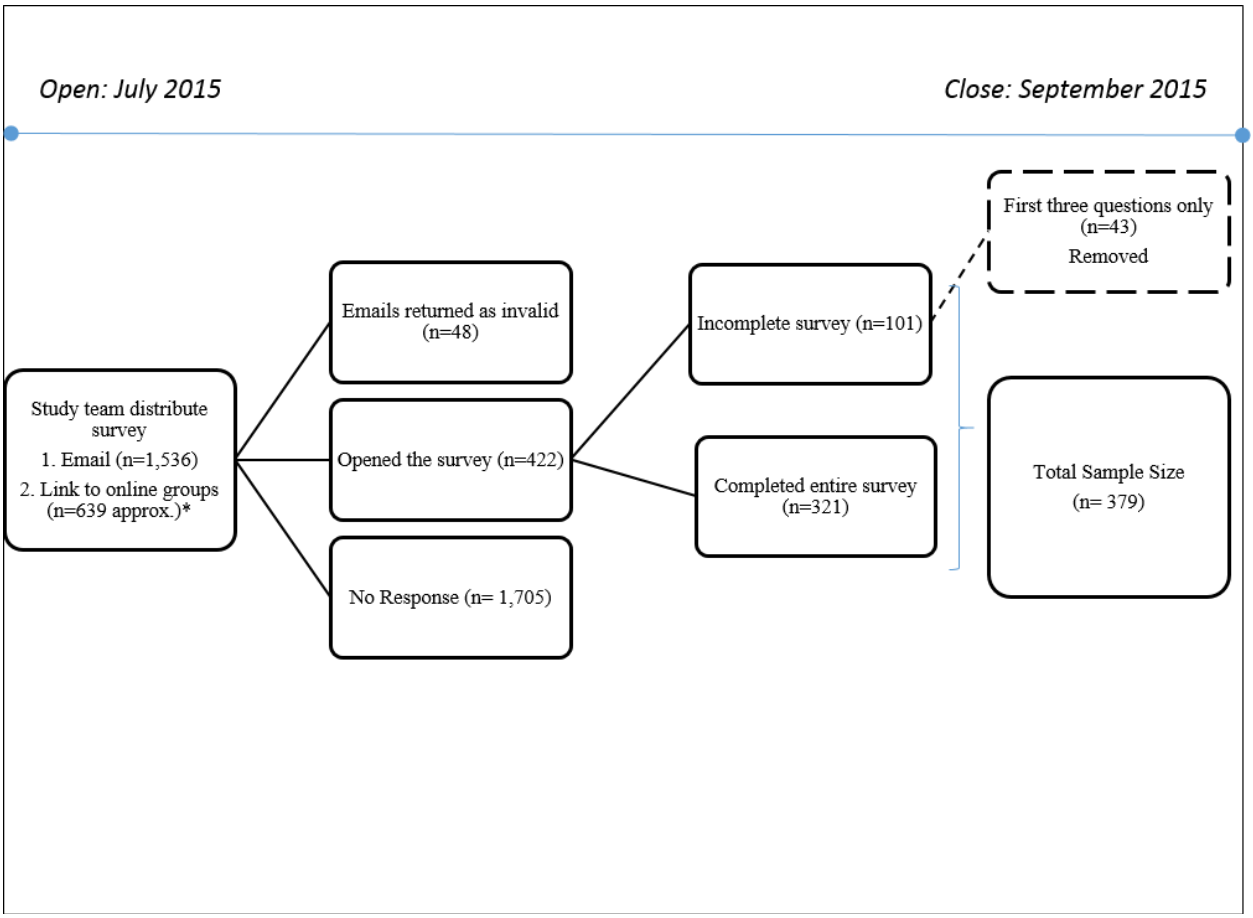

Figure 2. Survey participation flow diagram. *Link to online groups: survey link available to certain social media groups representing 639 OTs included in total response rate.

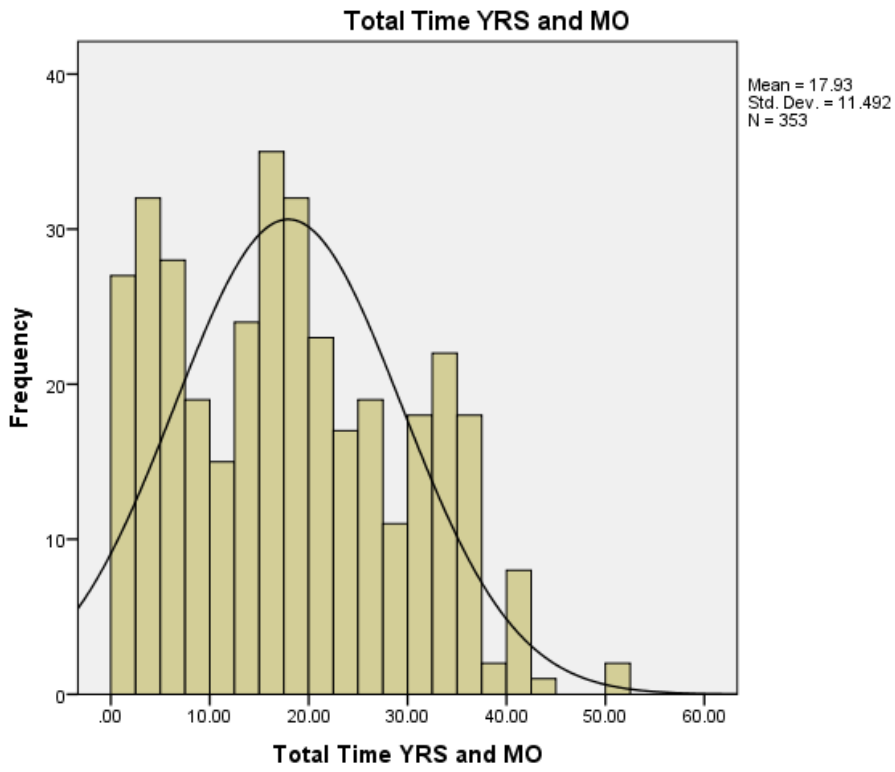

Figure 3. Sample distribution of OTs years of practice (years w/ months decimal)